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ABSTRACT

This theme issue focuses on topics related to global issues. (1) "Recycling for Art Projects" (Wendy Stephenson) gives an argument for recycling in the art classroom; (2) "Winds of Change: Tradition and Innovation in Circumpolar Art" (Bill Zuk and Robert Dalton) includes profiles of Alaskan Yupik artist, Larry Beck, who creates art from recycled items, and Inuit artist, Alootook Ipellie; (3) "Honouring the Environment through Art" (Sharon McCoubrey) makes connections between art and environmental concerns and offers suggestions for classroom related projects; (4) "The Electronic Environment: A Revolution in Image Production and Consumption" (Don Bergland) describes some specific technologies including the man made environment, virtual reality; and (5) "Diamonds are Forever: The Use of Metaphorical Art to Help Students Develop an Environmental Ethic" (Gloria Snively Corisglia) provides sample lessons of metaphor used to integrate environmental studies and art education. (MM)

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BRITISH COLUMBIA ART TEACHERS' ASSOCIATION

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By: Brianna Scarr, Richmond, B.C.

Global Education

BRITISH COLUMBIA ART TEACHERS' ASSOCIATION

British Columbia Art Teachers Association

Volume 34 Number 2 Summer 1994 Journal Editor: Sharon McCoubrey

BCATA, Provincial Specialist Association of the BCTF
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Artist's Statement:

" I drew this picture to show how the earth is very sick and is in danger, as well as lots of these animals are endangered species. Us people are killing ourselves, the earth, the plants and the animals. We are also polluting the grounds and the water with garbage and chemicals. We need to stop this or we will be in deep trouble."

Brianna Scarr

The illustrations in this Journal accompany the articles and are individually acknowledged.

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EDITOR'S VIEW

World peace, social justice, ozone monitoring, cultural diversity, waste reduction, international aid, environmental preservation... Global education encompasses many topics of immense importance. Few current debates in education or resources for teaching fail to make reference to global education.

What role does art play in global education? This Journal answers that question in relation to several of the topics listed above.

A day spent volunteering at a recycling station does much to convince one of the need to recycle and reduce garbage. Wendy Stephenson gives a strong argument for recycling in the art classroom. Along with the sound pedagogical justification for doing so, she offers practical suggestions to facilitate recycling.

"We often think of our Arctic as remote, pristine, and cold...great rivers, extensive forests, open tundra, and unspoiled wilderness." (Canada's Green Plan, 1990). Bill Zuk and Bob Dalton take us to the Arctic in their article "Winds of Change" and provide us with an insight into circumpolar art that may be new to many of us. One of the artists profiled in this article provides a good example of creating art from recycled items.

"Honouring the Environment Through Art" makes some connections between art and environmental concerns and offers some suggestions for related classroom projects.

Having recently completed a year working in an interactive software company, Don Bergland is able to give us an update on an environment of a different kind, the electronic environment. "...one of the most amazing environments ever developed by humans" (Don Bergland). In addition to describing some of the specific technologies, including virtual reality, digital libraries, encyclopedic multimedia etc., Don discusses the visual nature of the electronic environment and presents a challenge for teachers.

Gloria Snively Coisiglia reminds us of the importance of the metaphor in learning. Her article describes ways to use visual metaphors in the classroom in order to facilitate the students' understanding of environmental issues.

The power of art can be very effective in dealing with the serious issues of global education. The responsibility for global concerns must be carried by all, including the art class. Connecting art to global issues provides a mean-

ingful and relevant context for the students visual exploration. The challenge is there for all of us as educators to ensure that art is part of global education.

Sharon McCoubrey
Journal Editor

A Dream

I dream at night,
About a land of peace and happiness
A land of love and faithfulness.

A land where there is no war.
And where there are no people that are poor.

Where everyone has equal rights,
Where there are no fights,
Where everyone is judged by who they are
and not by what they own.

Where there is no pollution,
But where oh, where is the solution?

Alison McCoubrey

Editor's Note:
While I was working on this Journal this summer, I received a letter from my nieces in Ottawa, and the following poem connects directly to the focus of this Journal, so I include it here. Thank you, Alison.

Correction:
In the last BCATA Journal, Vol 34 No. 1, I referred to Carol Fineberg's work with Project Zero. She has since informed me that although she found the research work from Project Zero to be very useful, her research was on New York City's Arts Partners Programs. Thank you for the clarification, Carol.

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Recycling for Art Programs:

Making Art with Found Objects and Freely Available Materials

by: Wendy Stephenson

Teacher resourcefulness has often led to the use of recycled materials in art programs. Some Canadian curriculum guides have acknowledged the potential of such materials, and the successful use of recyclable, natural, and freely available materials has been documented in many articles about art activities.

More and more artists, scientists, inventors, and citizens are beginning to think in terms of recycling and creating new objects from old ones. Art teachers, often by necessity more than anything else, have been doing this for years. It is now time for us to expand on our use of recycled materials in our classrooms and to emphasize to our own students the reasons for reusing materials (Congdon, 1991, p. 68).

A commitment to the proposed recycling program could create additional learning opportunities. With the proposed recycling approach, students would be expected to contribute materials to their own projects and to class activities, scouting around to bring supplies from home, outdoors, and the community.

It would probably be best if *no art materials at all* were available for the high school student to use. This would mean that *every material* would have to be *obtained through the students own efforts.* The clay would have to be purchased locally or dug from a clay bank. Lumber would have to be obtained from the local building supply house and *sculptural supplies from the local junkyard.* The advantage in this type of arrangement is that the student will be able to continue using these sources after graduation. [Otherwise] interest in art may die because of the unavailability of materials; knowing where to get them, how much they cost are important elements in learning about the production of art. (Lowenfeld, 1987, pp. 462-3)[italics added]

While the term recycling may not have been current when Lowenfeld was first writing in the late 1940s, this statement shows that he realized the value of making the acquisition of studio materials chiefly the responsibility of the student. In the same passage he showed that he was sensitive to differing economic capabilities of students stating that the cost of materials should not put non-affluent students at a disadvantage. The proposed recycling approach avoids any possible inequity by having students provide only those materials that they can acquire without cost from available sources or from nature. Teachers would continue to purchase any materials needed for the program that can not be acquired freely

or substituted for in some way. The broad range of art projects that can be undertaken using recycled and natural materials are revealed in many books and publications on art activities. Relief printing is shown to rely on found objects; three dimensional sculptures and assemblages feature discards from the local service station and lumberyard; banners and wall hangings give new life to scraps of fabric, old buttons, bits of ribbon, and beads; weavings and baskets incorporate wild grasses; collage work integrates commercially printed posters, advertising materials, and other detritus; handmade paper books incorporate scrap paper and laundry lint.

The proposed approach aims to operate on the following assumptions.

- No material should be purchased or supplied by the art teacher where the materials function can be provided by reuse of materials that the student can bring freely from home or outdoors or that are in the school and would otherwise be thrown away.
- Students are expected to bring recycled materials for their own art projects as well as to contribute to a pool of materials for the class.
- No materials are to leave the artroom as waste that have potential use for future art projects. This includes the smallest scraps of paper that can be used in papermaking or collage.
- Senior students are expected to have some contact with businesses or industries in the community that would be willing to donate suitable related materials that would otherwise be disposed of.
- Where storage space is inadequate, each student can create some, perhaps personalizing her or his own box, container, or drawer. Some additional storage outside the classroom may be required to accommodate donated materials.
- Art teachers communicate their proposed art schedules well in advance so that students have adequate time to find and bring in specific recyclable materials by the time they are needed.
- The art class nurtures supportive relationships between school departments to ensure a free exchange of equipment, recyclable materials, and services between departments.
- Several media are worked on at once in the classroom in order to make the best of existing materials and equipment.

To assess how a recycling approach may be justified according to a schools stated goals, consider excerpts from the Statement of Philosophy of the Richmond (BC) School Board (1989). Presumably this philosophy and those of other schools are not dissimilar.

The Philosophy (pp. 1-3) states (in part) that:

- The Richmond School District is dedicated to providing opportunities for all students to develop the *attitudes*, skills and knowledge which will enable them to enjoy a *productive* and satisfying life and to be *positive, responsible participants in our* democratic *society* and the *global community*.
- The District will encourage and support the involvement of *parents* and the *community* as partners in the school system.
- An effective learning environment should engage the learner in building positive, *realistic attitudes* towards both self and society.

It seems that a major emphasis on using recycled materials in the art program could contribute significantly to these aims. Instilling a recycling awareness would build realistic *attitudes* in students by helping them to realize that the earth can not provide the world's population with unlimited resources, that materials do need to be reused in various ways and that contributing recycled material to their art program is something specific that students can do to help protect the environment. In addressing issues relating to art education and the environment, Barbosa (1992, p. 60) stated, other responsibility of art educators is to create awareness of the environment and its link to social issues.

By tracking down and using reusable materials, students can become more *productive* by learning how to "make due" creatively.

Encouraging parents involvement, by having them on the lookout for possible reusable materials and perhaps helping children deliver these materials to school, has the potential of creating further parent/school contact. Many parents would undoubtedly welcome an outlet for materials in their home that would otherwise be discarded.

In trying to establish a *partnership with the community,* talking with people in businesses, retail outlets, and industries senior students seeking sources of specific kinds of supplies would learn to broaden their contacts. In the Lower Mainland of BC, organizations within the community which indirectly contributed materials to schools via the non-profit Imagination Market (now defunct) are likely to be just as willing to give any of their unneeded materials directly to students from local schools.

While students will find locating and acquiring materials to be one kind of learning experience, utilizing these nontraditional materials will challenge them in yet other ways. Teachers can encourage students to accept the idea of using recyclable materials by helping them realize that such materials are in many ways a reflection of our lives and that starting from these materials can help all of us make art which is closer to our time and place, thus more readily expressing who we are. On this track, Congdon (1991, p. 71) states, perhaps we will think about recycling and ways that it can give us identity, spirit, and humor "She comments, "Folk artists have always been good at this" (p. 68).

As this latter comment suggests, the use of recycled materials encourages acceptance of a wider definition of art and recognition of a broader variety of art worlds, not just that of high art in the dominant culture (Chalmers, 1991, p. 57). By focusing on more inclusively defined art made from recycled and nontraditional materials, teachers can approach, in a comfortable way, issues relevant to their diverse learners why the art products from their particular cultures or groups may be viewed as craft rather than being given the status of high art, and who has the right to confer this status and to decide what *is* and what is not art.

Curricular Issues

Encouraging the use of freely available, nontraditional materials could also help teachers introduce in a more meaningful way the exploration of aesthetics, art criticism, and art history, while broadening the range of approaches sanctioned in the studio portion of the course. This approach could also contribute to the other curriculum concerns already alluded to, such as ecology, conservation, multiculturalism, communications, and social and personal responsibility.

Aesthetics

The study of aesthetics particularly can be brought more sharply into focus when based on an examination of art projects made with recycled materials for the same reason that Morreall and Loy (1989) see the value of examining kitsch as an alternative to examples of traditionally-valued art in considering aesthetic questions. They state:

There is a danger that students may come to have too much reverence for all works of art and feel uncomfortable criticizing any of them. By utilizing examples of kitsch and lesser works of art, that danger is greatly reduced. The students can usually spot quite easily what's aesthetically bogus in kitsch items, and that allows them to gain confidence and sensitivity in talking about more important works.

In examining their own projects utilizing recycled materials, students will be prompted to "develop their own criteria and ability for making aesthetic judgments" (Madeja and Onuska, 1977, p. 12).

Some of the questions they will deal with include: What is art? What is beauty? Why does one art project achieve the status of art while another remains a mere compilation of materials?

Sensitizing students to also react to what they find in the environment without letting associations of source, or past use, cloud their judgment, can also help students broaden their aesthetic taste. Believing that it is possible to increase one's ability to see beauty, Lowenfeld (1987, p. 319) wrote:

Much of modern society now has a heightened awareness of ecology, and children need but little encouragement to develop a concern for their environment. Discovering the beauty of natural materials need not be limited to woods and streams alone. Even scrap material can have hidden beauty in it. Rusty iron, or wrinkled paper, or even mould or mildew can be pleasing to look at if one is able to redefine values and not think of them as discarded and rejected parts of a sometimes oversterile environment.

The questions of change in taste through time and the existence of aesthetic pluralism across cultures is also readily explored in considering art made from found and nontraditional materials. The way that the controversial ready-mades of Dada artists and the plastic pieces BC's Iain Baxter, for example, have been perceived by the public may suggest to students that aesthetic taste shifts through time.

Art Criticism

Dealing with art made from recycled, nontraditional materials can pose some particularly intriguing questions because it is not always possible to translate views about existing mainstream art to such work, thus more critical judgment is required.

Looking at a well-known piece of art, made from recycled material, the teacher could guide students through a critical process of examining the feeling it evokes, determining the work's formal structure, searching for its symbolic clues, considering its theme, and deciding on the contribution of the materials used, and determining how all these elements reinforce each other and how changing any one of these aspects would significantly alter the meaning and effectiveness of the work (Eisner, 1972). Through this critical viewing, students could determine the relevant achievement of the work and judge why this particular piece might be considered better or worse than a piece that they have produced in the same genre.

Judging found art and art from recycled materials addresses the role of intentionality in art, another central question in the study of aesthetics. On this, Eisner (p. 110) writes:

Often (the material) is directly related to the type of visual meaning that the artist wishes to express. What is the contribution of the material to what the form conveys? How does the material affect the expressive content of the work? How would the work be altered if another material were used?

Art History

Teachers can continue to integrate the study of relevant art history with the studio work of the students. In dealing with a recycling approach, this encourages focusing on the work of recognized artists who have worked with similar materials. Working in relief or creating assemblages from recycled materials would undoubtedly kindle an interest in the reliefs of Kurt Schwitters, the large works of Louise Nevelson, and the sculptural assemblages of Picasso. Similarly students doing bannermaking, quilting, or other fiber-based work would find the art of Joyce Wieland, Norman LaLiberté, and traditional and contemporary quiltmakers highly relevant, while those working with materials from nature would more fully appreciate the arts of the Pacific Northwest Coast or those of Melanesia. Similarly those creating collages from scrap paper or commercially printed ephemera and memorabilia would be curious about how Leana Fay, Braque, and Robert Rauchenberg confronted the same problems they have been challenged with in creating art with these same materials. Also of interest

would be work from multicultural sources, traditional women's art, and folk art, as well as from the major movements such as Cubism, Constructivism, and Abstract Expressionism (sculpture and collage), along with lesser-known contemporary artists from around the world relying on reusable and scrap materials.

Dealing with the same materials and techniques as these other artists would make students more receptive to studying what is relevant to their own work rather than just looking at this art for its own sake. Students could also consider questions that relate to why some work recognized by art history made from nontraditional materials has had the status of art conferred on it and been displayed in galleries and museums while art made from similar materials by artists from diverse groups has not been admitted as a "candidate for appreciation by the art world" (Chambers, 1989, p.9).

Studio Production

In the classroom utilizing recyclable materials, students need to be alerted to the fact that idea and materials still need to work together. They need to realize that a unique material can spark an idea or an idea can create the need to search for a specific material-materials and ideas thus can feed on each other, but neither can work on its own.

One of the most important aspects of utilizing recycled art materials is that it would encourage students to develop an *eye for potential materials.* Seeing and responding to possible materials all around them, and realizing that such materials have the potential to be made into art, would give learners continuing ideas for projects as well as encourage them to maintain an involvement with art production after they have left school and no longer have access to teacher-provided materials.

Students should be encouraged to work with the materials around them that they are most sensitive to; they could benefit from being shown how other artists do this. Canadian urban artist Betty Goodwin turned to painting on truck tarpaulins in finding them particularly appealing because of their individually marked and stained surfaces. British artist Andy Goldsworthy, in touch with nature, creates his art by organizing and transforming, and then photographing, natural materials such as leaves, stones, ice, and grasses where he finds them in fields and woods.

While utilizing recycled materials is likely to encourage more diverse activities going on in the classroom at any one time, recycling need not alter the overall goals of the art program or make it material-driven.

Implementation

A recycling approach would probably be most readily implemented at the elementary level until such a time as a new set of expectations can be cultivated among secondary students. A senior art teacher at a secondary school in Vancouver indicated that there are a few students who can be counted on to always bring requested materials, but she said the program would come to a standstill if the teacher were depending on materials being brought by all students. An elementary school teacher in the same area of Vancouver, however, had no problem recently in getting her grade fours and fives to bring recyclable materials to use in their pottery lesson. She sent home with them a list of recyclable items and gave them a few days' notice to bring them to class. Almost all children brought, as requested, at least three suggested items on the list of freely available and at-hand materials and equipment (ice cream buckets, yogurt containers, plastic bags, combs, wire, etc.). It seems that by starting with the elementary grades, a new set of expectations could be instilled that could carry forward to the senior grades. Secondary school drama teachers for some time have expected students to routinely come up with various items to serve as costumes and props for the improvised plays that they perform in class. Such resourcefulness, therefore, seems not to

be too much to expected of visual art students of the same age once the idea of pooling recyclable materials for the art class has been introduced. During the depression era, many art programs relied on contributions from students, as evident from a significant percentage of the articles in School Arts Magazine during that time period.

Establishing Departmental Ties

As well as aiming for stronger ties with businesses and industries in the community and between the classroom and the home, the recycling approach for the art program could encourage the formation of stronger alliances between classrooms and school departments. The potential of receiving used costumes from the theatre department or fabric scraps from the family studies class (or even borrowing one of their sewing machines to use for a bannermaking project), or receiving wood scraps from the industrial arts program to use in relief work or three-dimensional assemblage should encourage new interest in the activities of these other classes as the art teacher tries to determine what she or he can offer in trade on behalf of the art class.

Organization, Storage, and Timing of Material Contributions

In deciding to implement a recycling approach, teachers need to encourage students to contribute, receive, organize, and store recyclable materials in a way that makes them usable and accessible. A tenet worth teaching and worth knowing early in life is that you don't really "have" a material if you can't find it when you want it. Students will need to learn to organize materials wallpaper books, small plastic and wooden items, pressrun end cuts of paper, old theatre posters, etc. so that they are available and usable when students need them.

Teachers will want to ensure that receiving contributed materials does not distort the timing of the planned art program. Posting an activities schedule well in advance and determining how to respond to inconveniently-timed offers of materials should serve to minimize any potential problems.

In Conclusion

It appears that introducing a recycling approach to providing material for the art program offers several learning opportunities. In fact to not utilize such a practice seems like a lost opportunity. Through recycling, students can appreciate, and can be challenged to work with, a more inclusive concept of art. They are likely to feel a greater ecological awareness and sense of social responsibility in the way they relate to the resources around them. This approach is likely to increase their sensitivity to the art of a variety of other cultures and time periods that have utilized recycled and freely available materials. Establishing a recycling approach in the art program could also help students see the artmaking potential of materials around them, which could encourage their involvement with art making throughout their lives.

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Footnotes

1. The Imagination Market, a Vancouver-based non-profit organization, solicited and received discarded remainders and waste products (many of unusual shapes, forms, and materials) from business and industry and made them available at low prices through a storefront retail outlet that teachers, parents, and artisans took advantage of as a source of supplies for creative activities.

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Winds of Change:

Tradition and Innovation Circumpolar Art

By: Dr. Bill Zuk and Dr. Robert Dalton

This article deals with an ongoing project which examines the perspectives of aboriginal people in the circumpolar regions of the world and their view of tradition as an important foundation for culture. It also examines innovation as an important aspect of renewal. Comments by scholars and aboriginal artists are discussed and the work of two individual artists is reviewed as a way of acknowledging the role and importance of tradition and innovation and how innovation revitalizes culture, giving it new meaning.

In addressing the issue of tradition and innovation in circumpolar art, a number of questions must be asked:

1. Who are the aboriginal people of the circumpolar world?
2. What do they say about their art and its role in sustaining tradition and expressing their cultural identity?
3. What role do traditions play in influencing the way art is currently being made?
4. How does innovation in their art reflect new outlooks and concerns?

Background

The Arctic regions of Alaska, northern Canada, Greenland, Siberia and Scandinavia (Norway, Sweden and Finland) constitute the circumpolar world. Each of these countries has substantial populations of aboriginal people with various languages and cultures. They live in some of the harshest and most remote areas of the planet -environments which for thousands of years have tested their will and ability to survive. These unique conditions have developed in them an ingenuity and resilience which gives a particular character to their art -the drama and exhilaration of life plays itself out in their carvings, paintings, prints and other art forms. Their artwork reveals a humour and seriousness about daily living. It also depicts a profound closeness to the land, an extensive knowledge of the myths and legends of an ancient past, and an abiding belief in spiritual realms and beings.

This investigation follows an earlier examination of traditional and innovative indigenous art in North America (Zuk and Bergland, 1992). The present study also deals with the Inuit of the Canadian Arctic and the Eskimo of Alaska, but it has enlarged its scope to include the indigenous art of the Greenlandic, Siberian and

Sami people (Laplanders in Norway, Sweden and Finland). What was of particular interest to the writers of this article was not only the distinctiveness and vibrancy of artwork created by indigenous people in various areas of the Arctic but their growing awareness of themselves, of having shared interests and concerns. This has been expressed through conferences, exhibitions and in other ways. Artists are becoming very aware of each other's work from country to country in the polar regions (Steinbright and Atuk-Derrick, 1993). They are showcasing their art in national galleries and other prominent venues to promote public attention and gain corporate sponsorship; they are participating in workshops and conferences to develop a pan-Arctic consciousness among their own people; and they are writing books and publications to disseminate their views about art. A high level of activity and achievement is apparent, suggesting that the visual arts are thriving in the circumpolar world and therefore deserve attention and commentary.

Tradition and Innovation

What are the characteristics of tradition and innovation and how do they manifest themselves in aboriginal art? Hoffman in (Wade 1986), suggests that traditional art ideas are often characterized by scenes of daily domestic life, hunting scenes, animals and nature, rituals and dance, war and conflict, and "other time honored and time worn themes cherished by white patrons as nostalgic tokens of a romanticized past" (pp.258). Art that has been generated for the curio or tourist trade is an example of this kind of tradition.

In an article written in Steinbright and Atuk-Derrick's Arts from the Arctic exhibition catalogue (1993), Fair remarks that the term "traditional" is used by scholars and many aboriginal people to suggest two primary groups or categories of artists. The first group consists of rural based, subsistence oriented people who identify with the form and symbols used in their culture -forms and symbols virtually unchanged from those of the past. The second group of artists builds upon traditions.

Fair describes the contemporary indigenous artist (and presumably the innovator) as a person who is often formally educated and well travelled, adept at picking and choosing ideas and symbols from his or her cultural past and combining them with current ideas and experiences. While formal education and travel may give artists a new awareness of their culture, adeptness and versatility in combining previous ideas and experiences with new contexts provides a more useful description of innovation.

Macnair et al (1987) describe the innovator as someone who is less restricted in their use of materials and their exploration of subject and form. This process may involve ingeniously combining or substituting more than one material or process, or abbreviating and simplifying ideas while still applying the intellectual sharpness and control that characterizes master work from a previous era. To add to this description, Jacka (1988) notes that the process of innovation involves an absence of predictability in that it typically departs from rigid structures or rules. Innovative artwork evolves through continued experimentation and an expanding repertoire of ideas.

What are the situations or events that nurture an innovative outlook in the lives of some aboriginal artists? While some are stimulated by experiences outside their culture, others feel they must return to their ancestral homes for inspiration and cultural ties. Jacka (1988) notes that a slower lifestyle removed from urban life produces a feeling of taking a step back in time. This sometimes serves to generate new ideas. It should be increasingly evident that the ideas pertaining to innovation discussed so far are either dependent upon or inextricably linked to fundamental traditional values of the culture.

Voices of the People: Role and Importance of Tradition and Innovation

There is an urgent need to listen to the voices of aboriginal artists and what they themselves have to say about the role and importance of tradition and innovation. Their views add a unique perspective. In an introductory comment from an art exhibition catalogue compiled by Steinbright and Atuk-Derrick (1993), Thue Christiansen, a Greenlandic artist, comments on the important role art serves. Art can convey the hope of a nation like her own to establish itself, to be recognized as a nation among other great nations. Art may also contribute to those within the society reaffirming their collective identity. To accomplish this, she alludes to the importance of traditions and also of change: "All of them (artists) use motifs that stem from their daily life. They are artists with a sense of respect for the traditions of their land, but also with a great deal of courage to receive the offers from the surrounding world in order to renew and receive new impulses" (1993, p. 62).

The new impulses referred to in Christiansen's remarks are understood to mean new or innovative ideas which are necessary for revitalization.

Abraham Anghik, a Canadian Inuit artist of considerable repute, seems to agree with Christiansen's ideas about traditions:

"The works of the artists mirror the physical and spiritual landscape of the north. The spirit world of myths, legends and shamanic imagery is a common theme. These works reflect the deep respect for nature, family and cultural values and offer a sense of hope for the future" (1993, Steinbright and Atuk-Derrick, p. 67).

While Anghik's remarks do not address innovation, his artwork contains much that is new. His monumental sculptures use exotic materials and gemstones in innovative ways to reinterpret mythology and stories.

The following comments of three contemporary indigenous artists vary considerably in the way they deal with the role and importance of tradition and innovation. The first two artists quoted have Tlingit origins. Their ancestral lands border the Arctic areas of Alaska. Jim Schoppert speaks first:

"The exquisite work of our ancestors teaches us to create work for the day in which we live. By taking the old, breathing new life into it, and developing a new creation, the spirit of our people lives. We (native artists) carry with us fragments of our culture and are now bringing these elements into the much broader scope of world civilization. We cannot return to the old ways, but we must retain the old ways and reflect them in our attitudes and our art" (Blackwood and Hall in Fitzhugh and Crowell, ed. 1988, p.326).

The balance between tradition and innovation is a delicate one for Schoppert who sees both as vital.

Edna David Johnson does not want to be bound by traditions and says so in describing how she creates with art materials:
"My artwork marks events in my life. I have a respect for native traditions, but I refuse to be bound by them in my artwork or my life...I like crossing boundaries in my artwork: making mask forms out of cast cedar paper, taking traditional geometric basket designs to make large pieces of artwork, using hand manipulated paper techniques, weaving traditional patterns in cedar and wood to use in my mixed media pieces" (Fitzhugh and Crowell, ed., 1988 p. 336).

Finally, Susie Bevins-Erickson Qimmiqsak, an Alaska Eskimo artist describes the feelings of conflict that confront the innovator:

"If you try anything new, traditionalists shun you, some gallery owners disown you, art critics dislike your work and some Native people react with disdain. But we have to be free" (Fair in Steinbright and Atuk-Derrick, 1993, p.20).

Susie Bevins-Erickson Qimmiqsak's remarks are poignant in describing the difficulties experienced by innovators. She quite likely speaks for innovative artists everywhere.

Many of those who speak about their traditions speak of respect, they speak about respect for the land and for their history as a people as told in stories and legends, and through various visual symbols of art. In speaking about innovation, the artists recognize that the work, their world, is changing, and they must change with it. They respect the past but are not necessarily bound by it. Those who introduce innovative ideas in their art, sometimes risk censure by those who wish to hold onto the past, and those pressures come from within the group as well as outside it.

Two Case Illustrations of Contemporary Innovations

Larry Beck

Larry Beck is an Alaskan Yupik. Born in 1938, Beck received a formal education in art at the University of Washington where he earned a B.A. in painting and an M.F.A. in sculpture. In the years that followed, he worked exclusively in the Western fine art tradition making large-scale abstract sculptures fabricated from steel and cast in metal. He worked in this manner for about fifteen years before turning to his cultural heritage as the main inspiration for his art.

Figure 1 shows one of his more recent works in which he uses found materials to create animals familiar to the Arctic: walruses, polar bears and so on. By its title, Punk Walrus Inuasuggests a mingling of two cultures, Western popular cultures and Eskimo. The subject of walrus is one which Eskimo artists have carved for centuries and this is more than an objective record of the marine mammal's appearance, Beck refers to it as a "spirit".

What seems most innovative in the work is its use of materials and yet even here Beck explains that his process has roots in traditional forms. There is something new but also something old in the manner in which the sculpture is constructed. He comments: "I am an Eskimo, but I'm also a 20th century American. I live in a modern city where my found materials come from junkyards, trash cans, and industrial waste facilities, since the ancient beaches where my ancestors found driftwood and washed-up debris from ship-

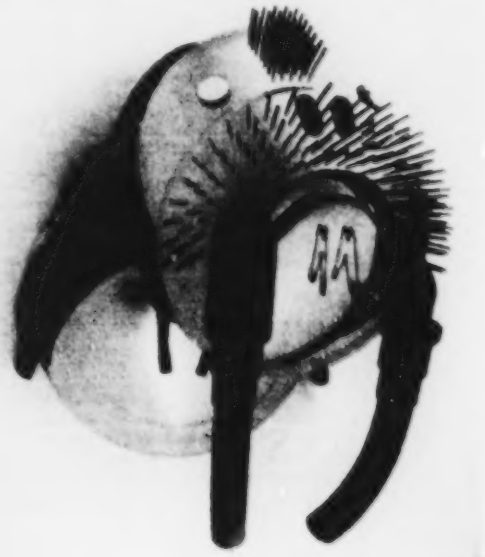

Figure 1

wrecks are no longer available to me. But my visions are mine, and even though I use Baby Moon hubcaps, pop rivets, snow tires, Teflon spatulas, dental pick mirrors, and stuff to make my spirits, this is a process to which the old artists could relate. Because, below these relics of your world, reside the old forces familiar to the Inua." (Fitzhugh in Crowell, Ed., 1988, p. 333).

In his statement Beck argues that the process which we would call assemblage has been part of Eskimo culture for a long time and it is one which older artists in his society would understand and appreciate. There is a centuries-old resourcefulness in Beck's discovery of new uses for old and discarded items. He has employed an image development strategy by substituting found objects for parts of the walrus whose shape they somewhat resemble. While the specific materials used in Figure 1 are not listed, it would appear from examination of the work that he has used hub caps for the head and neck, oil can spouts for tusks, safety pins and straight pins for whiskers, and a dark material for the back of the head and neck. A narrow strip runs along the dark material and this appears to be a detailed drawing likely a narrative of community life or the walrus hunt itself. Such narratives were commonly carved in ivory knives and other materials, with incised line. They were not meant to boast about one's conquest but to relate events, instruct the young about the hunt, and express respect for the animal as part of nature with whom the Eskimo lived in harmony.

In talking about his art, Beck makes reference to his visions. Here again there is a tradition upon which he has drawn. The spirit world is one of dreams, of encounters with creatures who have extraordinary powers. Such experiences are significant to him.

Alootook Ipellie

Born in a hunting camp on Baffin Island, Canada in 1952, Alootook Ipellie is proud of his heritage as an Inuk. What formal education he received was in a vocational arts program in Ottawa, Ontario where he was sent to continue schooling beyond the sixth grade. He found it difficult to adjust to life in a large, southern city. He struggled with the language, with masses of people, and with rigid schedules. The experience was not a happy one. The transition from traditional ways to modern was a difficult one for his people too. Ipellie uses a northern metaphor about whiteouts (an unusual atmospheric condition in which tiny suspended ice crystals make things indistinguishable in one's surroundings) to explain:

"As an Inuk living in the Arctic, you can expect to get trapped in a whiteout several times each winter. The cultural upheaval we experienced in our community in the late fifties and early sixties seems, in retrospect, a lot like being caught in one of those whiteouts, trapped and unable to go forward...The traditional period from hunters and gatherers to community dwellers proved fatal for many Inuit who simply could not adjust" (Ipellie 1992, p. 24).

Alootook Ipellie cut short his schooling and went home. Some years later he returned to Ottawa where he began writing stories and poems, and doing drawings for publications for distribution among his people, the Inuit. The cartoon is an art form which is sometimes assigned a rather low status in Western art but not so among the Inuit and certainly not by Ipellie. It serves as an important means of communication.

"Looking back to where I came from and how I was raised, I am extremely proud of my Inuit heritage, but I think it's important that a member of any cultural group should be able to interpret what is happening to his or her people" (Ipellie, 1992 p.24).

This seems the clear intent of his drawing in Figure 2. Like the shaman who transforms himself into a caribou or seal in order to intercede on behalf of his people as insurance for

SHAMANISM IS A LOT LIKE VISITING AN ALIEN WORLD...
HERE WE GO!
LIKE A CARIBOU HEAD...
YOU CHANGE ACCORDING TO WHOM YOU VISIT...
LOVE IT! LOVE IT!
...FOR OUR PEOPLE'S SURVIVAL!
NUNAVUT
...BUT ESSENTIAL!...
THIS IS NOT EASY...
...OR SEALS IN THE UNDERSEA WORLD!

Figure 2

survival, aboriginal artists also interpret the cultural experience of their people. They do so in order to contribute to their identity as a people and to communicate that identity to the dominant culture, a necessity if the culture is to maintain its vigor.

In a remarkable, innovative metamorphosis the shaman in this drawing enters a room marked N.W.T. (Northwest Territories) and undergoes an unusual transformation, first to a caribou, then to a seal. When he leaves, he passes through a door marked Nunavut, the newly formed and semi-autonomous region of the eastern Canadian Arctic (a recent historic event representing a significant political step towards Inuit self-government). The shaman's transformation seems to symbolize or even act as the agency for the political transformation which has occurred.

As with the Beck sculpture, Ipellie's cartoon rests upon Inuit traditions while introducing new ideas or innovations. Theirs is an oral tradition, one in which the important stories and legends are told from one generation to the next. A cartoon format is ideally suited to story-telling, and yet the cartoon, mass-produced by modern technology, is new. In the modern era, printmaking was introduced to the Unuit as a means of producing marketable art, enabling the people to make a living in permanent settlements. This meant giving up their dependence on the hunt with its seasonal migrations which sometimes led to a meagre existence. The hunters turned their skills to carvings and sculptures as well as stencil and stone relief prints. They created pictures of village life, dreams and legends. But mass communications such as those newsletters in which Ipellie's cartoons are published, are a newer idea and provide a means of reaching a much larger audience (McGrath, 1989). Written communication is a relatively new phenomenon in Unuit society. Figure 2 gives an indication of text, provided in both English and Inuit

syllabics (syllabics is a system of writing which resembles shorthand, introduced to the Inuit in the Canadian Arctic by missionaries midway through this century). Where incised drawings in ivory may have been mnemonic devices for previous generations of story-tellers, those traditions have been extended through cartoons with text. The cartoon format itself is not simply adopted from the West. In Ipellie's drawing, the use of diagonal breaks create different changes from those which are vertical and represent time. Diagonal breaks represent passage of another sort, into other worlds or realms.

Traditional life is present in the content of the cartoon, in the shaman's costume and in the reference to traditional reliance upon certain game animals, the caribou being the main source of food for inland dwellers and the seal for coastal dwellers. Dreams and spiritual journeys are highly valued and are accorded great respect in this narrative. Modern life is also referred to in the cartoon by the presence of modern dwellings entered by wooden doors, by written language, and by reference to geopolitical changes in the Arctic.

Like Beck, Ipellie has found a means of bringing together the best of two cultures, preserving and validating traditional life while participating in a process of cultural transformation as the Eskimo and Unuit adjust to new ideas and circumstances.

Summary

Tradition and innovation are important concepts in the evolution of cultures, especially ones which have experienced such rapid and dramatic change as those in this study. Like the Arctic itself, the people are both resilient and fragile. They have managed to survive for centuries in a harsh and unforgiving land and yet they face unprecedented challenges to their survival as a people. One of the changes occurring in the Arctic is a growing awareness of common concerns and interests among the indigenous people of the circumpolar region. Political barriers to contact are falling away and the people themselves are asserting a new collective awareness. Visual art has an important role to play in this process and this is evident in all kinds of artistic activity. It is also apparent in the statements of the artists themselves and in the work of Larry Beck and Alootook Ipellie.

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Honouring The Environment Through Art

By: Sharon McCoubrey

Environmental issues are everywhere. It is unlikely that one could read a newspaper, magazine, or watch television in a single day and not encounter a report or dialogue about the concerns for the environment. Much of the information and sense of responsibility for solutions are directed at education. Curriculum packages and various recourses focusing solely on environmental concerns are being created and distributed; entire conferences are being held to deal with this topic. These actions are wise as much hope for future resolution of the problems lie with the aware and concerned youth. This is confirmed by Severn Cullis-Suzuki's comment, "Our message is that children are the future, and the mess adults leave will be our home one day." (Cullis-Suzuki, 1993 p. 4).

What role does art play in education's efforts to deal with environmental concerns? Can environmental issues be dealt with in the art classroom without jeopardizing the nature and learning inherent in art? These are relevant questions because historically, art educator's have dealt with requests to play a role in other areas of study or topics for the purpose of enhancing or decorating that topic, but not necessarily providing for learning within the realm of art.

I believe there is a mutually enhancing connection between art and environmental issues. The power of art makes it an effective vehicle through which to approach the severe concerns of the environment. Working with the topic of the environment, which is current and prevalent in the everyday lives of our youth, gives relevance and meaning to their art explorations.

Several statements from the 1994 Visual Arts Curriculum will reveal the strong link between art and the environment, and reassure that such a link will contribute to reaching the intended learning outcomes for art.

"Perceiving and responding to images develops a sensory awareness and aesthetic appreciation of our environment."

"Communicating through images is a powerful means of expressing ideas and emotions to satisfy a range of personal and social needs."

"Images are made meaningful to the learner within personal, social, cultural and historical contexts."

These three statements are found in the introduction of the VISUAL ARTS Prescribed Provincial Curriculum Guide, July, 1994, and provide an explanation of the nature and importance of art education, while the following statements are selected from the learning outcomes section of the Guide.

"Make images (2D, 3D) of personal significance from their own world"

"Work cooperatively to make images of social significance."

"Evaluate art's importance as an agent of change, personally, historically, socially, and culturally."

"Recognize the role of visual arts in reflecting, sustaining and challenging beliefs and traditions in society."

We can now be sure that our prescribed curriculum does support the art-environment connection, but the question "Why is art a powerful way to address environmental concerns?" can be investigated further. A closer look at visual art to determine its role in our society and its impact on us personally will provide a justification for the reference "the power of art"

Throughout time, art has reflected society. A major issue in our current society is the environment, making it a logical and common subject for artists to deal with when creating images. The issues of society are the issues of art.

We have often said that if you really want to know something, draw it. The intense observation required to see something sufficiently to reproduce it in a drawing leads to knowing the subject well beyond basic recognition. When students create images of the environment, they get to know it in a deeper sense. What follows is a greater appreciation and admiration for the environment and the deep concern to not ruin or loose it. Artist Thomas Beck explains that that love and concern is the reason for his art work, "My work is a connecting link between nature and those of us who have lost touch with the earth. I am thus a catalyst for inciting in people a renewed love of nature and a desire to preserve this delicate planet" (Carmanah, 1989, p.32).

Art is a powerful vehicle because the visual message is effective. The voice of art is heard more clearly than the voice of the spoken word. Perhaps it is the involvement of more of our senses; perhaps it is the greater amount of information that is provided by a visual image; and perhaps the viewer is transported to a real experience when looking at a visual image. Art educator, Bob Samples said, "Graphic representation makes us deal with things in a different way." (Samples, 1990).

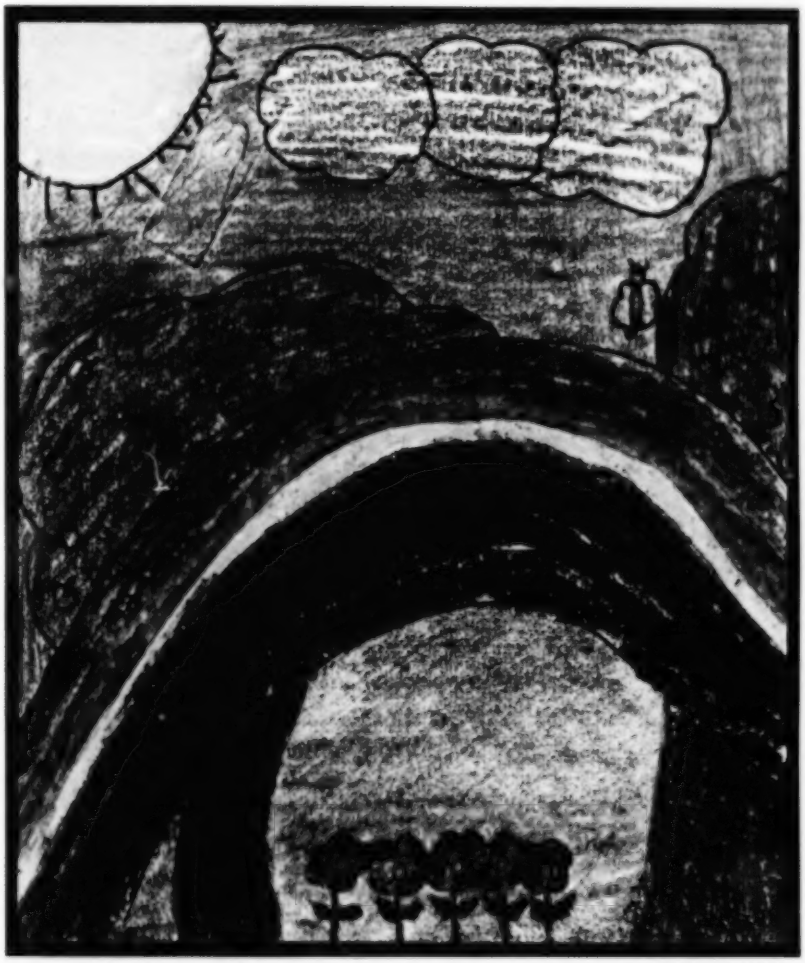
The strongest explanation for art being a powerful vehicle for environmental concerns lies in the nature of art, it touches the spirit. Art can go beyond the facts and information, beyond the cognitive domain, and reach our feelings. That is a crucial consideration because it is primarily when our feelings, our spirit, have been touched that action is likely to follow. Several artists, Renee Poisson and Dorset Huntingford, are aware of that impact when they create their artwork. "Art is important because a work comes so strongly from the artist that it can be a challenging experience for the viewers. Something might catch their attention and make them stop, allowing consciousness a new space." (Carmanah, 1989, p. 128.).

"It is my hope that you can feel, through my art, at least a touch of the magic, timelessness, and sheer joy of life that exists in nature. It is my desire to pull your heartstrings." (Carmanah, 1989, p.86).

We know of David Suzuki because of his work in science, and his great accomplishments in passing on to all of us much information about nature. It is true that knowing the facts and figures about environmental concerns is an important step in taking the concerns seriously. However, David Suzuki has also acknowledged the power of art in the role of dealing with the environment. "Among non-

native peoples, science is the most dominant view, but there are echoes of a spiritual attitude that differs radically from the fragmented linear perspective of science. Poets, artists, and composers tap into other dimensions of human sensation that could provide a counterbalance to the destructive course we have set up for ourselves. We desperately need to search for those alternatives to our present priorities." (Carmanah, 1989, p.9).

The nature of art makes it a powerful vehicle for dealing with environmental concerns and our students should be involved in creating art about nature.



Elizabeth Rose McLaren, Dufferin Cresent Elementary School.

Classroom Activities

The following suggestions for art activities are categorized in 4 groups: Environmentally Friendly Practices in the Art Class, Art Projects that Increase Awareness about Environmental Concerns, Art Projects that Honour the Environment, and Art Projects That Use Recycled Items. The intent in providing these suggestions here is to offer ideas for activities which might be useful to you, and to give a starting point for the planning of many other possible activities that could be done in the classroom.

Environmentally Friendly Practices in the Art Class

The following suggestions, not an exhaustive list, serve to model environmentally friendly practices for the students as the art teachers 'do their part'.

- Participate in classroom and school practice of recycling paper and cardboard.
- Have a box in the art classroom that contains paper to be recycled for other art projects. Paper taken from this box could be used for collages, mosaics, testing colours, sketching image ideas, doing rough copies, and various experimentation.
- Avoid excessive and wasteful use of paper.
- Re-use containers for various purposes in the art room such as paint mixing, water, storage, etc.
- Avoid using toxic products that would be harmful to the environment.
- Use water as needed, but not wastefully.
- Use the lights and other electrical equipment as needed, but not unnecessarily.
- When possible, use found objects or recycled items for creating sculptures and other artworks.

Art Projects That Increase Awareness About the Environment

Art projects can be used to draw attention of the students and of the general public to some of the problems of the environment, the affects of various destructive actions, and the possible solutions.

Help Save This Place Poster

- Painting a picture of a specific location will help the students understand the threat of pollution to all the environment, including their own community.
- Discuss with the students that artists usually paint landscape pictures because they think a particular scene is beautiful or appealing in some way.
- View slides or pictures of landscape paintings.
- Ask the students to think of an area of the natural environment in their neighbourhood that they think is beautiful. This spot could be their back yard, a park, any spot they are familiar with. If possible, have the students visit that spot and do a pencil sketch of it, or have the students do a pencil sketch of it from memory.
- Back in the classroom, have the students do a watercolour painting from the sketch.
- When dry, attach each painting to a poster that has been prepared with borders and the title "Help Save This Place".
- In a space provided at the bottom of the poster, have the students write a comment about why it is a special place, or what could be done to save it.
- Laminate the completed posters, then display them in the school hallways, a shopping mall, or other public location.

Cartoon

- Collect and discuss cartoons from newspapers and other sources that are based on environmental issues.
- Identify and discuss the message of each cartoon.
- Ask each student to think of a message about environmental concerns.
- Working in a sketch book, have the students experiment with characters and ideas that could be used to humorously present that message.
- Spend some time looking at various cartoons to observe different drawing styles, facial expressions and ways to represent characterizations.
- When the ideas have been worked out, have the students do final drawings on a blank cartoon strip.
- Display the cartoons or share them in a school newsletter.

Newspaper Headlines

- Collect newspaper headlines that refer to environmental issues.
- Each student will select a headline, place it as a title on his/her art paper, then do a drawing, painting or cartoon that illustrates the headline.

Persuasive Imagery

- Collect and display pictures from advertisements, posters or magazine articles that make a strong statement about an environmental issue. Discuss the message of the image and why it is persuasive.
- Have the students create an image, combining collage and drawing, that might be used to show people about the disastrous effects of pollution. The persuasive impact of the image might be achieved by the juxtaposition of something natural with something destructive.

Images Exchange

- Environmental issues are of global concern. To assist students to think globally about this concern, arrange for the exchange of pictures with another class somewhere overseas.
- Ask the students to think about and discuss the environmental concerns that are particular to their own area.
- Create paintings to show the situation locally showing either the problem or an action toward a solution.
- Each painting could be accompanied by a written dialogue about the environmental concerns.
- Exchange the paintings, then discuss the issues that are portrayed in the images received and how they are the same or different from the concerns that exist locally.

Partner Pictures, Problem-Solution

- Have the students work in pairs for this project.
- One student is to draw a picture about what he/she considers to be the worst environmental problem.
- Upon completion, this picture is given to the partner who then will draw another picture showing some solution to the problem portrayed.
- Display the two pictures together and discuss.

Picture Statistics

- Have the student research various aspects of environmental concerns, such as the amount of garbage dumped per year in an area, or the ratio of milk sold in bottles compared to the milk sold in cartons.
- Have the students work in pairs to meet the challenge of representing the statistics in a graphic form.
- Display the pictures posted next to the written information that is represented. Discuss which of the two representation has the greater impact.

An Environmental Calendar

- A calendar serves to give reminders on a regular basis.
- Prepare the calendar pages for the months of the current year, a computer program can do this quickly.
- Draw a frame onto the top half of the calendar page, or use a different format.
- Have the students draw a picture on each calendar page to depict any aspect of environmental issues. Each student could create his/her own calendar, or a group of students could work together to create one calendar.

Life in a Garbage Dump

- List a number of everyday activities such as eating at a table, sleeping in a bed, children playing outside, working at an office desk.
- Challenge the students to think about that activity taking place in a garbage dump.
- Each student will select one everyday activity, then draw or paint it taking place in a garbage dump. The inclusion of actual garbage on the image is an option.
- Display the images and discuss the affects of too much garbage and the possibility of garbage accumulating all around us.

Art Projects that Honour the Environment

Students can create images in the art classroom for the purpose of portraying the beauty of our natural environment. Heightened awareness and appreciation of the environment will increase the valuing of it.

Clay Mural

- Ask the students to think about the various components of the natural environment, such as rocks, trees, waterfalls, flowers, birds, butterflies, etc., then choose one or two they would like to work with in this project.
- Give each student a slab of clay on which they are to draw an image of their chosen subjects. Create the image in relief by carving away the clay or building it up.
- Let the slabs dry, kiln fire them, glaze, stain, or paint the bisqued slabs.
- Pre-planning of the mural will be necessary to ensure that all the slabs will work together to create the mural.
- Display the mural as a representation of nature.

Slide Presentation

- Have the students select images, take slides of them, then assemble them with a sound track to produce a slide presentation to be shown in the classroom.
- One approach to take would be to have some of the slides taken of images showing the beauty of nature, others showing the devastation of pollution or some other environmental concern.
- A similar presentation could be produced using video or multimedia.

Illustrated Haiku

- After examining Japanese Haiku, and the way in which they often pay tribute to some aspect of nature, have the students choose a particular component of the natural environment, then write a haiku about it.
- Use distinctive printing to put the haiku onto a scroll, then do brush painting to illustrate the Haiku.

Polaroid Images

- Using a polaroid camera, have the students walk outside the school or in a nearby park in order to select a scene to photograph.
- Use the picture as a starting point, add drawing or painting to create an image which represents an environmental issue.

Create a Slide

- Ask the students to look for and collect very small items from nature, such as seeds, thin grasses, etc.
- Arrange the small items to create an image on a square of clear mactac. Cover this with a second piece of mactac. Felt pens could then be used to draw on the plastic to further develop the image. Place the mactac square into a slide frame.
- Place all the students' slides into a carrousel, select accompanying music, and project the slide show of images from nature.

What Does It Mean?

- Post and discuss a comment, such as this statement by David Suzuki, "Convinced of our knowledge and ability to control nature, we exploit the very life-support systems of the planet in the name of short-term comfort and economic profit." (Carmanah, 1989, p. 9). A different statement or poem could be used.
- Ask the students to think about what the statement means, what practices or situations are suggested by the comment.
- Have each student draw an image that portrays his/her personal interpretation of the statement. Display the images and discuss the variation of interpretations.

Create a Book

- Select and discuss a topic, such as: What I am going to do to save the earth, or, Environment in Danger.
- Each student will create one page of a book. The book will have to be planned to determine its size, verticle or horizontal format, borders, type of printing, binding, etc.
- Have the students think about the topic from a personal point of view.
- The students will create an image that represents their thoughts about the topic, then write a statement to accompany the illustration.
- Assemble the pages and bind, then share the book with other classes or put it in the school library

Art Projects That Use Recycled Items

There are many items that are thrown into the garbage, both in the home and at the industrial or business site. The following projects use items that might normally be put into the garbage.

Box Cityscape

- Look at various art works that portray cityscapes. Discuss the basic layout and features of the local community.
- Have the students bring from home various small boxes that might normally be thrown into the garbage. Small boxes might include cereal, cracker, toothpaste, pudding, film, shoe boxes, etc. It will not take many days to gather a large amount of boxes.
- Working as a large group, plan a cityscape.
- Examine the size and shapes of the boxes to get ideas of how they might be used.
- Use a large sheet of corrugated cardboard or other surface as the base, then glue the boxes onto it to represent the buildings and other features of the build environment.
- Paint the boxes in order to change their identity to buildings. Add other features to complete the scene.

Box Sculptures

- Have the student collect small cardboard boxes.
- View slides or pictures of sculptures, observing the curved lines or straight lines in the images.
- Ask each student to select and work with an assortment of boxes to create a sculpture. Glue together as needed.
- When the assemblage is complete, cover it with plaster creating both smooth and textured surfaces.
- An alternate finishing option would be to paint the boxes white, then add black lines in varying patterns to complete the image.

Cardboard Tubes

- Cardboard tubes are often discarded from wrapping paper, wax paper, toilet paper, etc. Have the student collect various sized rolls.
- Sculptures can be created by cutting the tubes into various lengths, then gluing them together to form a composition.
- The tubes could be cut lengthwise, diagonally, or across. Mounting the tubes onto a background would give a different option to the sculpture.
- The sculpture can then be finished by painting, using a particular colour scheme, such as analogous, or a particular principle, such as contrast, to complete the image.

Castoff Collages

- Challenge the students to look for a particular item that is normally thrown away. They are to decide on an item that they could collect and accumulate enough of to use for a collage or a mosaic.
- When each student has decided on his/her particular castoff item, post a list in the classroom in order for all students to help collect for each other.
- When sufficient items have been collected, have each student create a collage or a mosaic that is made up of the items glued onto a background.
- The students will need to be innovative with the use of the items in order to have an image visible.

Coloured Foil Mosaics

- The brightly coloured foil circles on milk bottles are an exciting material to use for art projects. Have the students collect these foil circles over a period of time in order to accumulate a sufficient amount of the various colours.
- Select a subject for a mosaic, the choice and complexity is dependent on the age of the student.
- Complete a drawing on the base, a stiff cardboard will work well.
- The foil circles can then be cut into various shapes and glued onto the base to fill in the areas of the drawn image.

Cardboard Circle Patterns

- When the foil circles are collected from milk bottles, there is a small white cardboard circle with each top. These can also be saved and used for various art projects, such as a collage.
- Working with pattern seems well suited to this material.
- Have the students manipulate the circles and other shapes they have cut the tops into, on a base to create a pattern.
- Glue the white shapes onto a dark background.
- Additional painting or drawing could be added in order to further develop the image.

Construction Site Treasures

- If possible, have the students visit a construction site and look for the materials and items that are discarded as the work takes place. Ensuring that permission is obtained, collect these items (perhaps over time rather than on only one visit) and use them in the classroom to create a sculpture.
- A study of artists, including folk artists, who use an assortment of object in their creations would motive the students to create their own assemblages.

Conclusion

The title "Honouring the Environment Through Art" was chosen because of the definition of the word honour, an outward token or sign of regard or esteem, to give special recognition, to pay homage. Having students use art to honour the environment will lead to an appreciation that will touch the spirit and give the best chance of preserving our environment.

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The Electronic Environment:

A Revolution in Image Production and Consumption

By: Dr. Don Bergland

Humans have always excelled in created fantastic artificial environments to supplement, augment, or exploit the natural environment. The most astounding of these invented environments is currently developing in our culture at an amazing pace. Called by a variety of names such as Cyberspace, the Interactive Landscape, Digital Reality, Infospace, and the Datasphere (Metcalfe, 1994b), it hosts a complement of arcane applications such as virtual games, global networks, electronic bulletin boards, digital libraries, data banks, encyclopedic multimedia, personalized electronic news, and video conferencing. All these are components of the developing electronic environment. What may not be entirely evident, however, is that the focus of this environment is almost entirely visual and has resulted in a dynamic revolution in image production and consumption! It is the purpose of this paper to describe some of the major technologies and applications within this electronic environment and provide a basis for understanding the resulting visual image revolution.

The Electronic Environment

The arena within which this image revolution is occurring is an environment clearly delineated by contemporary cultural metaphors. Terms such as "the frontier", "pioneering", "cyberspace", and "superhighways" have been used to describe interaction with its landscape. This environment consists of a multitude of new technologies and applications which have arisen through recent discoveries in electronic and digital science. The technologies include such things as computer graphic imaging (CGI), virtual reality (VR), multimedia, and electronic networking all of which have found direct practical applications in the areas of the visual arts, business, industry, science, entertainment, and education.

Computer Graphic Imaging

The explosion of image production tools and techniques in computer and software technology has led to the development of an intensive new field called Computer Graphic Imaging (CGI). Developments in this field have been rapid and dramatic. As a technology, CGI focuses on the production of electronic and digital images through computer processing. It has pervaded all aspects of our culture from the

arts to corporate business and is currently growing at a fantastic rate (Brown, J.R., 1993). By 1998, it is predicted that the computer graphics market alone will have almost doubled in size from a $36 billion market to a $69.9 billion market (Porter, 1994).

Computer graphic imaging is a universal technology which finds practical application in most areas of human activity. In the visual arts, the development of computer and sophisticated graphics software has permitted individual artistic expression in such areas as drawing, painting, sculpting, 3D modeling and rendering, animation, storyboarding, photography, graphic production, and video post production and editing. An entire visual arts studio can now exist on one microcomputer allowing artists to work and create in ways never before imagined. Output devices are also becoming very sophisticated. Through the process of stereolithography, for example, it is now possible to design a sculptural object on a computer screen and then "print out" an actual 3D model (Dickson, 1992). In other areas, CGI technology has provided the basis for scientific developments in global climate research, terrain imaging, flight simulation, and aerospace research. Medicine has fully exploited graphic technology in medical illustration, anatomical reconstruction, model building, and other health practices. Computer graphics have become essential tools in the imaging systems that deliver medical information and in the process of generating entirely new views of physical structure and anatomy (Rhodes, 1993). In business and commerce, CGI techniques and products are integral to the production of business imagery, visual presentations, graphs, charts, organizational and administrative modeling, and schematics. Police and legal practices are being innovated by CGI techniques and computer graphics are now being used extensively in courtroom crime reconstructions, criminal tracking, and identification procedures (Sims, 1994b). In the entertainment industry, CGI technology is the basis for the production and presentation of action theatre entertainment, interactive media, simulation, motion-based simulators, large screen film formats, and ride-film simulation. Television graphics and effects, filmmaking, visual SFX, and video have been revolutionized by the new visual procedures possible through CGI techniques. Even Disney now used electronic graphic technology in image production (Robertson, 1994).

Multimedia

Multimedia basically involves methods of combining and integrating visual images, text, and audio to create unified presentational and interactive productions. Once used extensively in the video game industry, it has expanded into business, education and entertainment applications at an extraordinary rate. In 1993, multimedia sales reach $5 billion, and analysts predict they will grow to $24 billion by 1998 (O'Connell, 1993). Multimedia technology expressed through the video gaming industry reaching $12 billion in sales in 1993.

Multimedia has been employed extensively in many areas of human endeavour. Artists are now using it both as a way of expressing traditional ideas and as an innovative medium for discovery. In medicine, multimedia products are being developed which address all aspects of health care and medicine (O'Connell, 1993). Multimedia presentations employing images and animation are used in pharmaceutical and surgical equipment advertising as well as in medical school training and regular practice (Mahoney, 1994a). In business, the most productive and prevalent commercial use of multimedia has been in corporate training. Programs which utilize video clips of managers explaining job functions with charts, graphs, text and even animation are proving to be essential (O'Connell, 1993). The video and computer gaming industry has developed at a phenomenal rate and uses multimedia technology to produce thousands of new game titles a year for Sega, Nintendo, and other major gaming platforms. Edu-

cation is using multimedia technology for edutainment titles, educational programs, and as tools for student discovery.

Virtual Reality

Virtual Reality (VR) is perhaps one of the most imaginative and innovative concepts to occur in our history. A VR environment is one in which the visual surroundings have been computer generated. A person "enters" this visual space through the use of elaborate head-mounted displays. By using these in combination with data gloves and tracking suits, participants can actually move around and interact with computer-generated imagery and feel as if they are actually inside the environment. Virtual Reality is growing at annual rates of approximately 60%. This is about twice the growth rate graphics experienced 25 years ago. By 1997, it is estimated that over a billion dollars worth of Virtual Reality products will be shipped (Machover and Tice, 1994).

Virtual Reality is a technology which finds applications throughout society. Artists are finding new expressive outlets by creating art exhibits using VR environments (Sims, 1994a). Medicine is using VR tools and environments for research investigation, training simulation, and computer assisted operations (Earnshaw & Vince, 1994). VR "walk-though models" are now being used in molecular modeling, psychiatry, and surgery. In education, virtual reality and multimedia are merging to enhance discovery by removing boundaries from the way learning and teaching traditionally occur. (Brown, J.R., 1993). VR is becoming an important tool in education since the technology allows students to learn in ways that cannot be represented in the real world. Within a VR setting, for example, a student can explore an atom by taking it apart, reconstructing it, and putting it into orbit. (Leibs, 1994). VR participants can also literally explore future and past worlds through current technology. Many historical environments and sites such as the Basilica of San Francesco in Assisi are being visually recreated. Participants can enter the virtual environment and stroll around admiring frescoed walls and tile mosaic floors (Sims, 1994A).

Electronic Networking

Networking is the "social" concept of linking computer terminals together in a connected web of intercommunication. This involves large networks of linked terminals as well as small electronic bulletin board services. Networks are developing vast followings. As of October, 1993, it was estimated that there were approximately 35 million users of connected computer networks alone (Godwin, 1994). It is estimated that there are 57,000 computer bulletin boards in North America and the figure doubles every 18 months. There are approximately 15 million users of these bulletin boards (Metcalfe, 1994a). The concept of networking through interactive television will generate a market that will participate in revenues from a combination of industries that collectively generated $300 billion in 1993 (Rebello, 1994).

Electronic networking links participants in a variety of areas and purposes. In the visual arts, many electronic on-line galleries and networks permit artists to use interactive methods of exhibiting and producing their art. The International Painting Interactive (IPI) project, for example, is an electronic studio where global electronic canvases are hung on the network. Artists from many different cities can work together on joint digital paintings. One of the latest projects involved a hundred painters, video artists, graphic designers, and musicians in fourteen cities around the world who worked together for forty-four hours creating many digital paintings on the network (Brown,D.J., 1993). Electronic galleries exist on the network as places where artists can hang their digital images and can be accessed by computer at any time. The Electronic Cafe is a videoconferencing program linking artists in 60 cities around the world. Projection displays bring these confer-

ences to large screens in the cafes, creating a "virtual space" in which artists from different cafes appear to be in the same room (Staten, 1993). Information and entertainment industries are also changing though a variety of network applications. The Information Superhighway (National Information Infrastructure) is a data highway dedicated to transporting information. This highway links homes, offices, businesses, libraries, and universities into one large network. Users are able to access movies on demand, shop, conduct banking, play video games with other people, make travel arrangements, tour museums and galleries, enter library systems, or just communicate. In education, students are able to receive lessons from anyone anywhere. The famous "500 channels" concept (The Full Service Network) is another example of networking technology. By viewing television sets and using a controlling device, users will be able to participate in game shows, "virtually" try on various fashions, watch movies, or play video games whenever they want (Vizard, 1994).

The "Visual" Nature of the Electronic Environment

These technologies and applications have created a revolution in image production and consumption. Although electronic technology is something which can be applied in a wide variety of media products, applications have unquestionably been dominated and controlled by the graphics and image production field (Nelson, 1993). Within this context, visual images may be produced and consumed for distinct but interrelated purposes. They can serve an artistic and entertainment function, facilitate the communication process, or impart understanding and information. Recognition of the nature of these new purposes will help elucidate the image revolution currently occurring in the electronic environment.

Image production and consumption in the area served by the arts and entertainment is vast. As we have seen, the primary electronic technologies and applications require immense amounts of computer graphics. The arts, entertainment, film, and video industries alone consume overwhelming amounts of imagery. New and powerful visual styles and techniques are being developed and displayed in television graphics, film and video sequencing, layout, and special effects. In publishing and advertising alone, the number of images produced yearly is astounding. New magazines dealing with various topics and subjects feature amazingly produced graphics. Magazines such as Adbusters, Axcess, Edge, Mondo 2000, Ray Gun, and Wired show distinct new image and layout styles which express the vibrancy and dynamic of the electronic environment. There are over thirty full-colour, highly-illustrated glossy magazines presently dealing with the video game industry alone. The dominance of the visual element within these industries is undeniable. The art and entertainment industries will continue to demand new formats, image concepts, and a multitude of artists to maintain the supply.

In terms of communication, visual images can facilitate the process in several ways. First, there is the growing understanding that communication is more effective when expressed visually. This means that in many field, people must learn how to produce and consume communicative images in new ways. Business people, engineers, educators, administrators and others must understand graphics communication, spatial visualization,m creative visual thinking, and have the ability to convey ideas in images. Many industries are enhancing their communication power by availing themselves of the new technologies of CGI and VR. This means that non-artists must now learn new visual languages such as those found in animation, filmmaking, and 3D graphics in order to market and perform regular services with competence (Mahoney, 1994b). With the proliferation of computers, graphic software, and desktop graphic production, immediate image making is encountered more frequently in employment and leisure. Both the desire and expectation to cre-

ate competent visual images is rapidly expanding to non-artist populations. Second, a concept called "visually-oriented computing" has developed in which graphics now serve as a language of communication between humans and computers. Visual-oriented computing allows computer users to see graphically the effects of their communications with the computer and demands that they use their visual skills to manipulate graphical objects on the screen as part of a communication process (Abernethy, Nanney, & Porter, 1989). Not only does this demand producers of new visual interfaces and communication structures, it places a critical demand on consumers who must approach communication in a non-verbal and purely visual fashion. The immense proliferation of graphics and graphical processes into all areas of our culture demands a new visual literacy from everyone.

Closely allied with visual communication is the function of the image in imparting understanding and information. Although there are many ways in which this process happens, the most structured and systematized work has occurred within a discipline called "visualization". Visualization is the use of computer graphics and interactive techniques to gain insight and to communicate those insights to others (Brown, J.R., 1993). It employs computer graphics to visualize events that haven't yet occurred in reality as well as visualize places that don't yet exist. In the field of science, it has become a structured approach for developing imaging systems which allow researchers to observe with graphic immediacy those aspects of a system which may not be apparent through verbal or numerical data (Dickson, 1992). This visualization process has been widely employed in all the sciences and has been used to conceptualize climate simulators, volume representations, and models developed in botany, chemistry, and microbiology. In medicine, it has been used to invent and design practical medical imaging techniques (Williams, Evans, & Shirley, 1989). A vast number of societies and conferences have been organized to explore the concept of visualization. Their goal has been to provide a multidisciplinary interaction between scientist in human vision and electronic imagery and to allow interaction between imaging technology designers and users (Rogowitz, Brill, & Allebach, 1991). This field has even sponsored a new career opportunity with the emergence of the "visioneer". Visioneers are computer scientists working in visualization who draw upon techniques from the related fields of computer graphics, user interfaces, image processing, computer vision, signal processing, and computer aided design to help people develop effective imaging systems (Kaufman, Nielson, & Rosenblum, 1993). In the electronic environment, the line between art and science has become indistinct.

Although structured visualization was primarily developed by the scientific community, it has since expanded into the fields of engineering, education, and business. The effectiveness of this concept has led to a form of visualization technology that has revolutionized the way humans conduct their professional work (Kaufman, Nielson, & Rosenblum, 1993). "Academics have capitulated almost totally to the concept of learning enhanced by visualization and business can measure monetarily the incremental retention of messages delivered with colour, sound, and motion" (Nelson, 1993, p. 97). Visualization is now accepted as an essential part of the scientific, business, research, and educational processes (Brown, J.R., 1993) and is considered a high growth area that will continue to push the boundaries of both the electronic and the image revolution.

"Visual" Education and the Electronic Environment

It is not difficult to perceive the explosive nature of the electronic environment and the image revolution occurring within it. In order to negotiate its landscape competently, inhabitants of this environment

must be able to respond to an entire new world of visual expectations and demands. In the same way that our culture has required that individuals know how to read and write with fluency, it is now becoming apparent that individuals must also know how to use and create visual images with accuracy and comprehension. This is certainly a logical role for art education. In order that this role may be fulfilled, however, certain traditional understandings must be expanded to include views of a more comprehensive nature. This expansion recognizes four considerations.

First, a viewpoint must be generated that embraces image production and consumption in its broadest social and cultural sense. Humans spend more time producing and consuming visual images than any other activity. Each person in our society appreciates, assesses, critiques, composes, creates, consumes, rejects, embraces, and designs thousands of visual images a day. Although this has always been a predominant activity, image production and consumption are becoming far more pronounced and pervasive as we develop an environment specifically designed to highlight the visual process. All aspects of human visual experience must be recognized as important. Consequently, content horizons must be broadened to include fine, popular, commercial, and industrial art production and consumption as legitimate forms of visual activity. Image production and consumption is no longer the domain of a few select individuals. It is the focus of the entire electronic environment.

Second, the contexts and technologies that comprise the new electronic environment must become an educational priority. These are already part of youth culture and students are interested in exploring them at school. Art-related activities, discussions, and issues can be generated from the vast amount of electronic and visual information being produced in popular magazines, TV shows, computer programs, and multimedia products. Art programs must also begin to integrate traditional practices with current technologies and tools by establishing workspaces which duplicate those used in the electronic environment. Examples of this are already occurring in schools such as River Oaks Elementary School in Halton where administrators have designed a school environment which reflects the "real" world. The school is electronically focused and interaction occurs through various forms of networking. Students are expected to become conversant with multi-media tools and communicate, create, and learn through electronic means, CD-Rom, and the Internet. Visual image production is taught using contemporary software programs and is integrated with audio, text, and other essential communication media (Allan, 1993).

Third, the artistic, communicative, and informational functions of the visual image in the electronic environment must be explicated. Curricula must focus on the new learning, languages and skills involved in these. Various educators have already stressed the value of art training for those helping scientists visualize their data (Hays, 1993). This has resulted in attempts at relevant contemporary curricula which focus on visualization education at the K-12 level. In work with scientists at EPA, for example, Theresa Marie Rhyne discovered that they have to rethink many visualization paradigms when asked to examine isosurfaces, cutting planes, rubber sheets, and volume renderings. Rhyne has developed ideas about how these concepts can be translated into basic science and art education programs at the K-12 level(Hays, 1993). New skills involved in visual information, imaging, and visualization are being addressed in various ways. Books such asMind over Media: Creative thinking skills for electronic media (von Wodtke, 1993), provide detailed curriculum structures wherein visualization techniques and skills such as gestalts, pattern seeking, levels of detail, cognitive mapping, hierarchial ordering, parameters, visual metaphors, and visualizing information flows, are explained for new media

environments. In terms of developing new vocabularies and languages, manuals accompanying graphics software packages contain new image production concepts and ideas that teachers can use in expanding visual production and criticism studies in the classroom. This is already being attempted by different educators who are trying to expand both traditional art vocabularies and the elements and principles of design to include new electronic concepts (Wong, 1993).

Fourth, the fact that image production is now big business should be exploited and enjoyed in as many ways as possible! Visual image production has been historically considered peripheral to "real" activity. This is no longer true. It is now the dominant activity within the current environment and the world of the future will continue to use images in yet unimagined ways. This should provide interesting social and economic focuses for art education rationales and support. The revenue generated by image production in our culture is vast. New roles and opportunities exist for those who want to focus on a future in visual production. Commercial industries are demanding that artists be computer literate and able to create and process images on the computer. Industry is currently so short of appropriately trained artists that in many cases they are forced to employ non-artists to design and execute artwork. There are a multitude of career directions for those wishing to make image production their future. One of the feature items at the 1993 Siggraph conference, for example, was a large four sided cubical structure listing art jobs. Every inch of space was filled with postings for graphic artists, designers, and programmers who had graphic experience. The revenue, income, and opportunities for artists in the field of graphics production, virtual reality, and multimedia field will be unprecedented and will certainly permit an added emphasis and encouragement for art education in public school settings.

The Challenge

The electronic environment and image revolution provide a unique historical situation for the visual arts. At no other time have visual products, knowledge, and skills been so widely demanded and utilized by industry, business, science, technology, the arts, and education. Major commercial and industrial revenues are directly affected by the quality and quantity of visual images produced for their use. The development of aesthetic styles, techniques, and purposes in the arts has exploded. Artists as well as non-artists are now being asked to produce visual images for a variety of purposes. There are only positive indications that this situation will tend to increase. This poses an exciting challenge for the field of art education. Given both the artistic expansiveness and the soaring economics of the current image revolution, it is now entirely possible to develop impressive and practical rationales for establishing visual education as a priority in our school system. What this will require is the expansion of current educational models to embrace the dynamics of the new technologies and their graphic applications. It is with those who understand the dimensions of the visual image within the electronic environment that the future will lie.

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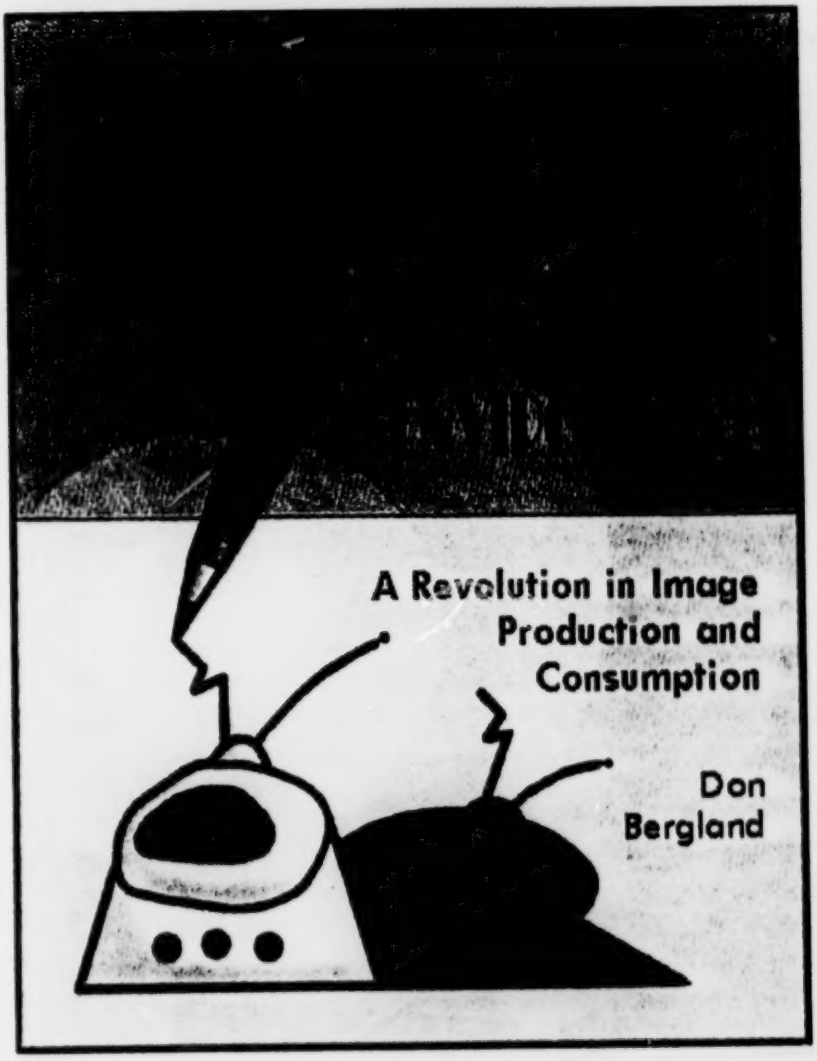

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Diamonds are Forever:

The Use of Metpahorical Art to Help Students Develop an Envioronmental Ethic.

By: Gloria Snively Corsiglia

We have become accustomed to thinking of metaphors as poetic figures used to decorate language and make it seem more attractive. Such insubstantial devices belonged vaguely with "the arts" and were properly checked at the door before one took up serious business of scientific inquiry. Increasingly, however, scientists, philosophers, linguists and educators have been re-discovering what artists have long understood: metaphoric thinking lies at the heart of human thought and endeavour. It now appears to many researchers that all past and present human achievement - including all of modern technology, is rooted in metaphoric thinking. It is difficult to know which came first -the metaphor, art, the tool, or the human being.

Metaphoric thinking is everywhere: it can be found in the language of our workaday world as well as the language of our dreams. It is the stuff of our apprehensions and the wings of our inspiration. Just as previous generations discovered the suspension bridge and Velcro by observing spider webs and the tenacious bracts of burdock; young students of aeronautics, bionics, and hydroponics try to imitate nature when they invent "new" machines and technological processes. This paper describes how teachers can use visual metaphors as powerful instructional tools to help students in classrooms understand abstract environmental issues and to construct solutions.

Indeed, the case for examining the role of metaphor in problem solving and in knowledge-creation is now very strong. (Black, 1962; Lakoff and Johnson, 1980; Munby, 1986; Muscari, 1988; Ortony, 1979; Sutton, 1978,1980,1981). It is found at several points in the intellectual development of individuals and societies. For example, metaphorical thinking is fundamental to: scientific theorizing, the evolution of language, children's spontaneous attempts to generate meaning from experiences, teachers' attempts to help children make sense of the world, textbooks, magazines, and news media, sculptures, paintings, and drawings, the speech of preachers, lawyers, and politicians.

In each case a first step in the interpretation or reinterpretation of natural phenomena is to carry over into that discussion a way of speaking previously used elsewhere.

What is a Metaphore?

The word metaphor comes from a Greek word that means to transfer. A metaphor transfers meaning; it bridges, extends, stretches, twists the meaning of words so that they apply to other objects, phenomena, or situations than those to which they originally applied. In its broadest, most inclusive sense, metaphorical understanding includes simile, allegory, analogy, parable, symbol, song, and works of art. It includes anything that transfers and translates the abstract into the concrete, thus making the abstract more accessible and memorable (Best, 1985).

Who has ever heard of Rachel Carson's metaphor of the seaweed nurseries and forgotten it? Who has ever read Gregory Bateson's "Mind and Nature" and forgotten the lesson of the crab, the orchid and the primrose" A metaphor allows us to see the unusual in the particular. It pulls us in by drawing on our own experience, our own knowledge and emotions. In involves us because it takes something that we know and feel and uses it in an entirely different way. Thus, metaphor seems to be a remarkably efficient means of both integrating experience and representing it for reflection (Stanley-Muchow, 1985).

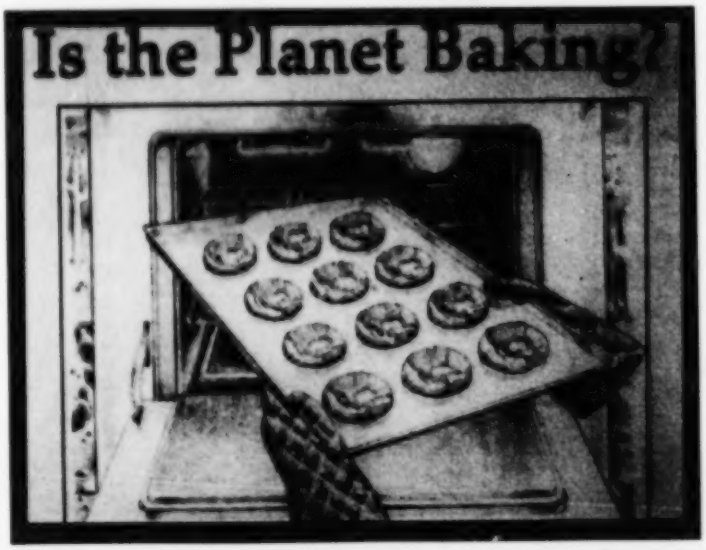
Visual Metaphors

When artists use metaphors they are frequently searching for ways to explain complex or abstract ideas, or to help the viewer visualize it in such a way that they can examine the implications for themselves. Similarly, teachers can selectively use the metaphorical artwork of painters, sculptors, cartoonists, and film-makers to help their own students explore environmental issues, and construct solutions.

For example, the covers of magazines such as Time, Newsweek, Harpers, Research and MacLeans frequently use visual metaphors to convey environmental issues of global proportions, the earth as a grenade, garbage dump, the earth balancing on a scale, the earth baking.

The Greenhouse Metaphor

Successful metaphors are often achieved through structuring imagery generated by scientists. For example, scientists are concerned about the danger of ozone depletion and the "greenhouse effect", a long-term warming of the planet caused in large part by increased levels of carbon dioxide in the atmosphere. One reason that the greenhouse metaphor works is because there are obvious connections between the environmental concepts of interest and the way a greenhouse functions. Carbon dioxide in the atmosphere acts like the glass of a greenhouse by letting the warming rays of the sun in, but keeping excess heat from radiating into space. Another reason that the metaphor works is because the process of comparing a greenhouse to such complex abstract phenomena helps us to make sense of our experience by giving it concrete form.



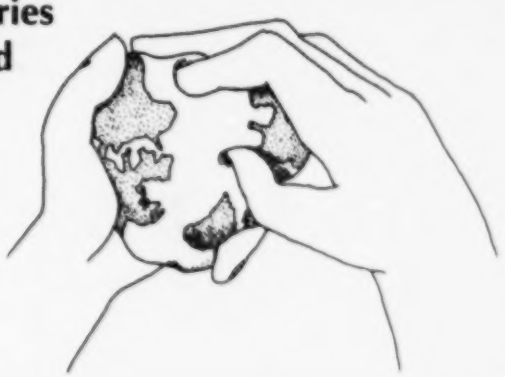
Visual Metaphors in the Classroom

Teachers can use metaphorical thinking activities to encourage students to explore artwork depicting environmental issues. For example, the 1988 cover for Clearing: The Northwest Energy News depicts the earth as cookies baking in an oven. The visual image of cookies baking appeals to the child in all of us, and enables the communication of concepts with a richness of detail because the sensory aspects are more highlighted.

For a challenging classroom activity, have students search for examples of environmentally relevant magazine covers and posters and ask them to examine the implications of the imagery for themselves. Start a file folder of environmentally related visual metaphors and use your own creative imagination to incorporate this rich source of imagery into the classroom.

If we swim in a sea of visual metaphor we should be certain that we can locate the describe the beasts. One of the most convenient sources of visual metaphors that can both stimulate imagination and clarify our environmental challenges may be the "cover art" commissioned for news and specialty magazines. But the art that catches our eye and challenges our thinking is very expensive and jealously protected. For example, the November, 1984 issue of Science Magazine portrays hands sculpturing or shaping the earth. If we cannot reprint the 1983 Science cover depicting hands molding an earthen planet, we can at least provide an example of visual metaphor by showing a Victoria student's artist version of the concept.

20 Discoveries That Shaped The 20th Century



Laura Corsiglia

Students could discuss the visual image of hands shaping the earth and brainstorm 20 technologies that shaped the 20th century. Depending on the grade level and socio-economic background, students will list such technologies as the car, telephone, atom bomb, plastics, penicillin, computers, robotics, hydroponics, satellites, nuclear reactors, submersibles and telecommunications.

So rapid has the information explosion been that many of the by-products of our technological age were virtually non-existent only 20 years ago:

Virtually Unused Words and Phrases in 1971

acid rain
biodegradable
styrofoam
PCBs
driftnets
clearcuts
meltdown
greenhouse effect
ozone layer
dioxin
sorties
aids
supertanker
recycling
nintendo
patriot missiles

Students need to understand that with all technologies, there are tradeoffs. New technologies frequently bring on the cultural blues, just as the old ones evoke migrating pains when they disappear.

One of the many implications of this type of classroom activity is that students come

to understand that the information environment and effects created by these new technologies are "live environments" in that they alter our feelings, sensitivities, and even our values.

The computer is to many observers the most extraordinary of all technologies ever devised by humans, since according to McLuhan (1968) it is "the extension of our central nervous system." The computer has made possible our satellites and spaceships which have put man-made environments around the planet, ending "nature" in the old sense. The information explosion and the effects created by the computer are a form of evolution, since they have a profound effect to our human condition, just as the natural environment effects evolution itself.

The Mother Earth Metaphor

Perhaps the oldest metaphor for the planet earth is that of a Goddess as the creator (Campbell, 1988). The human woman gives birth, just as the earth gives birth to the plants and animals. A mother gives nourishment, as the plants give nourishment to the chain of life. And when a Goddess is the creator that gives birth and nourishes life itself, it is her own body that is the universe. There we come to appreciate the real sanctity of the earth itself, because it is the body of the Goddess. We talk of Mother Earth, the prime parent; the source.

A direct method of teaching metaphors in the classroom could be used in which the strategy of teaching the metaphor emphasizes the processes of comparison because students need to hear the processes in detail (Thompson, 1986; Lucas, 1991; Snively, 1992). The teacher might begin by using a chart to illustrate both the similarities and differences between the planet earth and mother or motherhood. In one column, the students could list important aspects of mothers or motherhood; for example, gives birth, nourishes, is a parent, and so on. The teacher could then say, How can the planet earth be viewed as a mother?" The students would be asked to examine the associations listed in the opposite column and see if they are associated with the planet eart as well.

The Earth	Mother
**	gives birth
**	nourishes
**	is a parent
**	beautiful
*	kind
*	disciplines
*	forgives
--	has feelings

* indicates similarity,
** indicates much similarity,
-- indicates no similarity

Campbell (1988) goes on to say that we go right back to the Indians, who believe that the informing life and energy of all things is the earth. Like the Mother Earth, the idea is that we and the earth are the same.

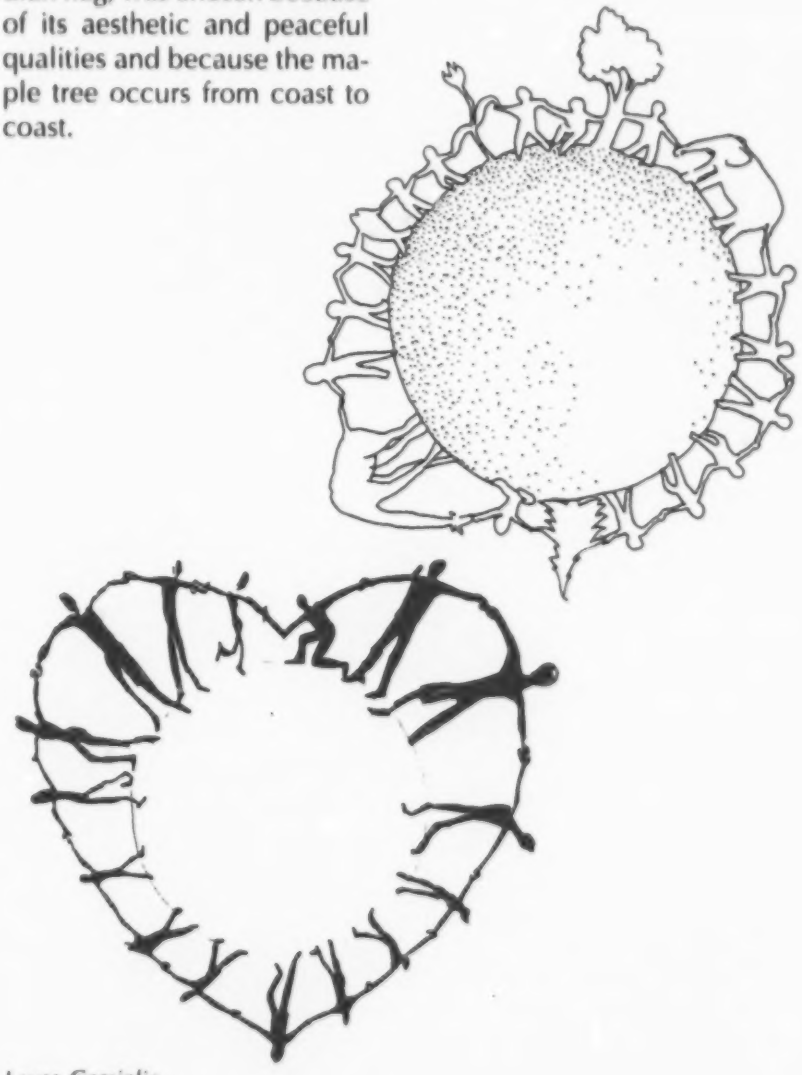
Symbolism in the *Classroom*

What is important for teachers to realize is that symbols, a type of metaphor or sign, allow young people of different cultures and different languages to communicate with one another. An excellent classroom activity is to introduce global peace symbols, the dove, the olive branch, the rose, lily, international children holding hands. Discuss the meaning of the symbols and relate them to the students' own descriptions of peaceful feelings, their concerns about environmental degradation, and to global connections. Locate and critically analyze symbols which represent power and domination over nature, and over nations. Evaluate the symbolic imagery of national flags, bank logos, corporate trademarks, university crests, sports emblems, etc. Discuss the positives and negatives of regional, national, and international symbols.

Extend this activity by having the students analyze symbols which persuade the viewer to consider global environmental issues and the connections among peoples everywhere. The Canadian Ecologo, an image consisting of three doves intertwined to form a maple leaf, was adopted in 1990 by the Environmental Standards Association to help consumers identify products and services that minimize the burden on the environment.

The logo works because the wide-ranging dove is recognised the world over as a symbol of peace, and the maple leaf which adorns the Canadian flag, was chosen because of its aesthetic and peaceful qualities and because the maple tree occurs from coast to coast.

Don't just explore teacher selected metaphors, let students search for metaphors and symbols in the various types of media, and share them during class discussions. It helps develop critical judgement in the use of literary and artistic metaphor; and a chance to analyze the pungency of metaphor. From their discussions students can design their own symbols of global connections and peace, such as these created by a high school art student in Victoria.



Laura Corsiglia

Pre-Service Teachers Design Metaphorical Lessons

Student teachers in the Environmental Education course at the University of Victoria designed metaphorical posters to depict an environmental issue of local or global concern. The purpose of the assignment was two-fold, 1. to design a poster concerning an environmental problem or issue of concern to students at the grade level they wished to teach, and 2. write lesson plans to encourage their students to explore the metaphorical image. identify their own beliefs and opinion toward the issue, and develop their own environmental ethic.

Deb Mossey's poster *"Searching for Balance"* symbolizes the connection between the human or built environment and the natural ecosystem. The symbolism contained in the poster seeks to emphasize that the modern human-constructed environment must exist in a state of balance with the natural world. The Yin/Yang symbolism summarized the cyclical and interrelated mature of polar opposites and suggests critical interaction between expansion/contraction; creation/destruction; make/female; and light/dark. Deb plans to have her grade 12 students view a slide presentation that contrasts pristine ecosystems with images of human exploitation. They would eventually construct a model of an ecologically benign community which would be built upon a fundamental understanding of nature and processes.

Jennifer Stefani's "Rubix Earth" highlights how we as humans are changing or impacting the Earth through our actions. Jennifer's grade five students would first explore the metaphor of "Earth as a beautiful piece of music", recalling pristine images and sounds. Students would then be introduced to the Rubix Earth poster, and asked to write down their personal interpretations. Students share their ideas about the poster, stressing that there is no set correct interpretation. To stimulate thinking, Jennifer would ask leading and extending questions, such as:

- What is being compared? Why? How?
- What is implied by the Rubix cube? The background? The colour intensity of the cube?
- Why is the Rubix cube not in the beginning state?
- How might the Rubix cube puzzle be solved?
- Why is the word SOLUTION important? What solutions might solve the Rubix Cube puzzle so the earth can regain a state of wholeness? The teacher encourages the ideas that there is no one solution, but that there is a starting point -education.

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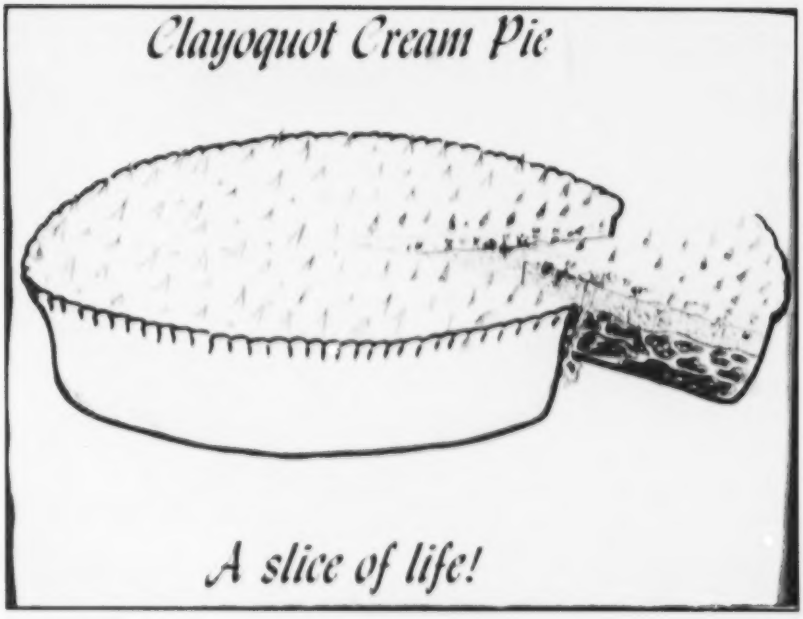
Helen Reddin's poster uses the image of a diamond engagement ring with the diamond as an image of the world. Students explore the success and failure of the famous slogan, "Diamonds are Forever". as introduced by DeBeers jewelers. Helen's poster modifies the slogan to transfer the idea of "forever" to the world. In developing the concepts of resource, renewable and non-renewable resource, management, and environmentally friendly, Helen encourages her students to explore the following questions:

- Why do you think the artist designed the poster this way? What did she want you to think about?
- Can anyone think of something in the world that would last forever?
- Is there anything in this world we thought would last forever, but it didn't?
- Do you think a metaphorical poster is a good way to get across your ideas to people? Why?
- Do you think it is important that we think about the future and the resources available for future generations? Why?

Finally, students are asked if they have a message they would like to get across using a similar technique of visual metaphors? Students brainstorm messages and metaphorical images, then design their own metaphorical posters.



Randy Ollech used the metaphor of a cream pie to spark students at the grade 5 level to think about a local logging issue that has become an issue of global concern. The Clayoquot Cream Pie metaphor encourages the viewer to compare the similarities, differences and attributes between a pie with Clayoquot Sound. The students' ideas are written on the blackboard, to show that not all students derive the same meaning. By comparing and contrasting the humorous metaphorical image of a cream pie, and by researching and debating the issue, students explore the concepts of forest, renewable and non-renewable resources, and consumer(s). Finally, students develop a value position on the Clayoquot Sound controversy and present their position in a small personal mural or one created with other students.

Although a few student teachers expressed some initial anxiety at being asked to create an artistic poster, all of the students appeared to enjoy sharing their finished products. They were surprised at how much they enjoyed the assignment and reported they had to do a great deal of creative as well as conceptual thinking about an environmental issue, and about teaching in general.

Conclusion

The visibility of visual metaphors is greater today than in that of the previous generation. Part of that access is in the creating of art forms in magazines, cartoons, T.V. commercials, sculptures, films, dance, and drama. Unfortunately, the views of influential groups frequently dictate the formation of public information systems and educational curricula. As Ron McGregor (1990) states, we are in an age of survival of the economically fit in which the needs of the economic stakeholders and the interest of business and industry are increasingly represented. Therefore, educators need to equip students with the tools suitable for a technological based society. This means that students need to inquire critically into global problems; they need to analyze, assess, formulate and speculate and develop questions around these issues. Such investigation serves as a basis on which to study the technologies and the metaphors of humanity. It is a model which encourages students to reflect on the subculture. Students should be provided with a basic understanding of how and why artists use metaphor to generate meaning, and what influences the creation of specific metaphorical art. By comparing the metaphorical art work of various societies through time, students are able to explore the evolution of political and environmental thought.

At the same time, students should be provided opportunities to create with their vivid imaginations exciting new metaphors. Such a process develops the students' identity and openness to experience. Hence, personal development through metaphor is as important as learning about metaphor. In this way, teachers can utilize the metaphorical artwork that is personal to students and to their own communities in helping them to answer the questions, "Who am I, and how am I connected?"

How does a teacher, a teenager, a pre-schooler influence adults, governments, or neighbouring nations who are denigrating the planet? What can they do to make a difference? Through metaphor, the answer is "lots". As the greenhouse effect causes concern all over the world, students at Quadra Island Elementary School discussed a range of environmental problems and drew posters to raise the environmental consciousness of the community. At Southpart ELementary School in Victoria, one grade 3 student drew her concerns about the extinction of animals, and at Spectrum High School in Victoria, one grade 12 student drew her interpretation of the "Mother Earth" metaphor.

A few words of advice for teachers who may be interested in using this technique: select your metaphors carefully. A metaphor won't work if it is based on something the student doesn't know or hasn't experienced. A spaceship, robot or Nintendo game won't work for a child who has seldom if ever watched T.V. or read comic books. However, everyone hooks into some metaphor or other, and thus the teacher has to have a bag of metaphors and a bag of metaphorical thinking activities ready to reach for the appropriate one. The real test of any technique is whether it works. When students use metaphor, they ask questions, demand to participate, smile a lot and become a little bit "lion hearted".

One of the most important problems related to environmental education today is the feeling of alienation and powerlessness that comes from depressing news media. For many students, the urge to "drop out" offers more attractions than the urge to shape the future of our planet. Students need to be convinced that the planet is worth saving and that problems between individuals, groups and nations are possible to solve. They need to experience success in the study and resolution of problems related to environmental degradation.

Through metaphor, students are provided a powerful tool for creating new meaning and for persuasion. To the extent that students understand the value of metaphor, they will be better equipped to help the peoples of the world enlarge their own spheres of cooperation, and wonder about their relationship to the life of the planet. Herein lies our hope.

Laura Corsiglia

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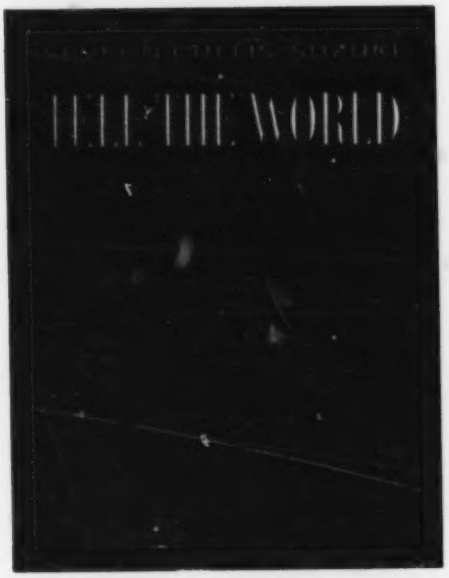
BOOK REVIEW

TELL THE WORLD

A Young Environmentalist Speaks Out



by Severn Cullis-Suzuki

Severn Cullis-Suzuki is a high school student in Vancouver and the daughter of David Suzuki. Inspired by the time spent with her family in the rainforests of Brazil, Severn returned to Canada with a desire to help save the environment. Along with young friends she formed a group called the Environmental Children's Organization.

Severn's book, Tell The World, relates her experiences as a young environmentalist culminating in the participation of her children's group at the United Nations Conference on Environment and Development or Earth Summit, which took place in Rio de Janeiro in June 1992. The text of her moving speech at the summit is included in the book which is wonderfully illustrated by the work of Canadian high school students.

Some may argue, as my nine year old daughter attempted tom that Severn Cullis-Suzuki has had opportunities opened for her that may not be there for the average young environmentalist. She herself addresses this issue by discussing activities that children in amy classroom can do to make a difference in saving the environment.

This book is an inspiration to those who hope their children are developing a belief that they can make a difference in, and to, the future. It is an excellent resource for a unit on environmental concerns, combining text and art works of students in a compelling manner.

Published by Doubeday Canada Ltd.
© 1993
ISBN 0-385-25422-9
paperback

Reviewed by Margaret Scarr.

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THE ELDERS ARE WATCHING

by Dave Bouchard and Roy Henry Vickers

The Elders Are Watching is written by storyteller Dave Bouchard and illustrated with the dramatic work of B.C. artist Henry Roy Vickers. The text, presented in a narrative style, speaks to the reader of our responsibility to our environment, of past promises broken, of neglect in caring for the land, and of hope for the future. It is a powerful message which speaks to children and adults alike.

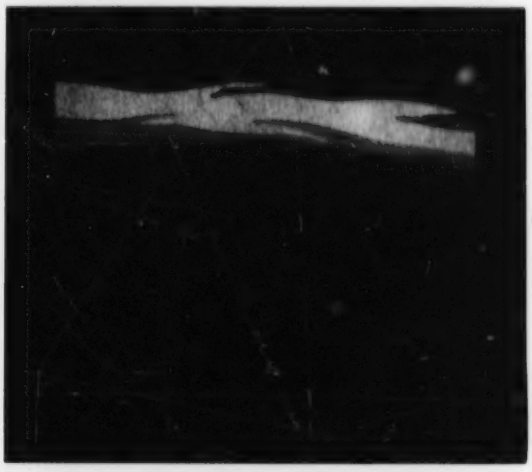
In the work of Henry Roy Vickers we see the beauty and power of our West Coast and feel the presence of the Elders. If you look carefully into his images you will find the elders watching over the landscape with sadness, fear and hope. Vickers' images connect past, present and future and cause us to think of the relationships between culture and the environment.

This book is rich in possibilities for the classroom. A beautifully illustrated story book with a powerful message in and of itself, The Elders Are Watching is also a link to discussions of First Nations culture and relationships with the environment. Its strong linking of past, present and future might invite student research into historical background of environmental issues in B.C., investigation into current environmental concerns and debates, and reflection about personal beliefs regarding our responsibilities towards protecting the environment for future generations.

The Elders Are Watching is also a wonderful collection of the work of a renowned B.C. Artist. The extensive collection of Vicker's work in this book provides an excellent opportunity for investigation of the relationships between his life experience, beliefs, and cultural heritage and his art work.

Published by Eagle Dancer Enterprises Ltd.
c 1990
ISBN 0-9693485-3-3
paperback

Reviewed by Margaret Scarr.



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Drawing Against the Odds

by Mia Johnson

Laurel is seven years old. She attends elementary school with the help of a full-time SEA, and is currently in Grade 1. She is visually impaired after bilateral cataract surgery at the age of four, and wears thick, aphakic lenses with two fixed focal lengths. One focal length is set at reading distance, and the other at 8 feet. Laurel has to adjust her own physical distance in order to bring an object into focus. Any kind of diagonal tilt in her view will distort the image further, so that some parts may be in focus while others are out. Since she has no peripheral vision, she swivels her head to scan images. She is left-handed.

Laurel is further challenged by an attention deficit, and she has processing difficulties as well. As a high-functioning autistic child, she often has difficulty determining what is important in any particular context. Although she takes Ritalin, a prescription drug that helps her global concentration, she is visually distracted by small nuances of glitter or colour. For example, she may find a running tap or a pattern of light on the carpet much more interesting than another person, and respond inappropriately to social and educational situations.

For the past two years Laurel has been following Heidi's drawing development in "Heidi's Horse" (Fein, 1976). She often chooses it as her bedtime book. However, she does not tend to acquire drawing schemata as readily as most children. She treats her drawings as puzzles to be solved, and has developed many unique approaches to "building" different structures. Frequently she shows unexpected resourcefulness. Given the visual and processing difficulties that Laurel experiences while drawing the simplest objects, her pictures are often remarkable feats.

Laurel demonstrates great persistence in drawing. She will draw a subject over and over until she "gets" it, and attacks problems in different ways. She generally rejects any guidance or suggestions. Nevertheless, she is developing a good sense of the kinds of things that go together to make up a drawing subject or a constructed object like a puppet. Recently, she decided she wanted to draw a house. Although at school she had previously drawn a "shoe" shape with several figures in it to represent the Little Old Lady Who Lived in a Shoe, her drawing repertoire has mainly been limited to figures or animal shapes composed of ovals and lines.

Laurel wanted her drawing of a house to have a large exterior shape, a door with a doorknob, and a window. However, these proved to be tricky to organize on the paper. She started with a large vertical rectangle and placed a doorknob high up on the left side (figure 1). After some thought, she realized this looked like a door, not a house with a door. She tried to salvage her original intention with a small window in the upper right. This was still not satisfactory, and she added seven more windows to the first one before giving up. As a final hopeful thought, she drew a window around the doorknob.

Laurel's second drawing began very confidently with a large exterior shape, to which she added a separate

door and doorknob which she said were "upstairs" (figure 2). But after placing the five windows, she decided this was not working out either. She expressed her annoyance with the door, which would not "do" what she wanted it to do. The third drawing began with a ground line, on which she firmly anchored the door lest it "go up" again into the top of her picture (figure 3). She spent several minutes colouring the door solidly to make sure it stayed put on the ground line. She then completed the house shape. She added the four windows and happily announced, "Aha, NOW I got it." She was very pleased with herself and spent several minutes adding on a roof and colouring it.

Laurel benefits from opportunities to draw several times a day at home and school. Most of all, she benefits from the belief of her parents and teachers that she is a good artist. While she is learning to question the appearance of her drawings, her self-esteem and confidence have stayed remarkably intact, allowing her to persevere.

Mia Johnson is an art educator at the University of British Columbia, and is currently working on her Ph.D. in computer graphics for art education. She is Laurel's mother and the author of "Understanding and Appreciating Your Child's Art" (1993) Lowell House.

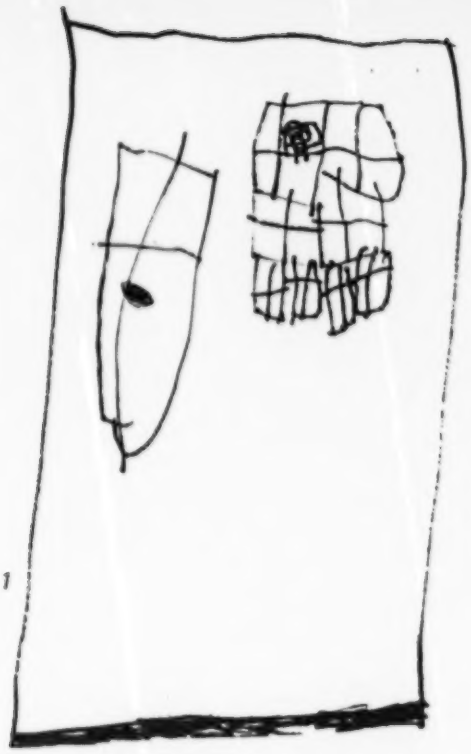

Figure 1

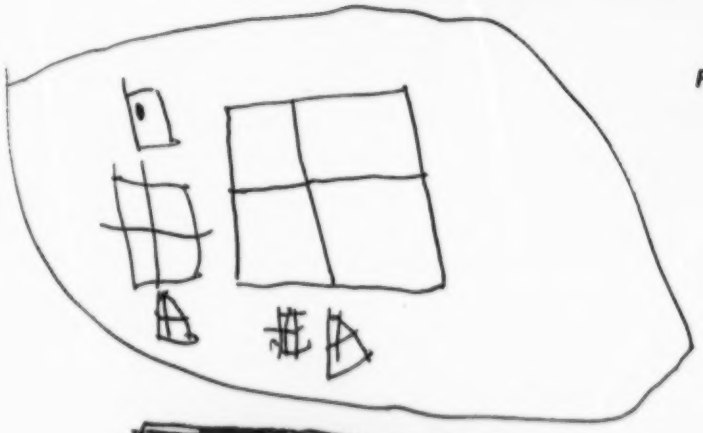

Figure 2

Figure 3

British Columbia Art Teachers Association

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